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HUMAN GEOGRAPHY
THE PACIFIC LANDS

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INTRODUCTORY NOTE

THIS volume is written with the same fundamental outlook as the other Human Geographies by the same authors. Some elementary geographical ideas are assumed and others are introduced gradually, while an attempt is made by the method of presentation to make the subject of the book a coherent whole and not a collection of scraps. But the authors have a wider aim than the presentation of geographical facts; they have endeavoured rather to present those facts in such a way that they are seen to make a little clearer some of the problems of the modern world.

J. F.
E. Y.

HUMAN GEOGRAPHY

THE PACIFIC LANDS

CHAPTER I

PACIFIC ISLANDS AND PRIMITIVE PEOPLES

When Balboa, in 1513, stood on the summit of one of the high mountain peaks in the isthmus of Panama and beheld the calm shining waters of the ocean, afterwards named the Pacific, that is, the *peaceful*, he had no idea whatever of the vastness of that which he had discovered. Neither had Magellan when, seven years later, he passed through the strait which now bears his name, and took the first European vessel into the mysterious unknown. Since the time of these pioneers, however, the Pacific Ocean has lost most of its mystery. Its shores have been surveyed, its depths measured and mapped, and the primitive peoples who live upon its thousands of islands visited, and, in some cases, greatly changed under the influence of European and Chinese civilisations.

The Pacific.—We now know that its total area is about four times that of Asia, or a little larger than that of all the dry land on the surface of the earth. Lying between America on the east and Australia and Asia on the west, it is so wide that a ship going from Singapore to Panama sails almost exactly half-way round the world.

Along the eastern or American boundary towering mountain ranges descend steeply to the sea, and, from the far north to the far south, there are no large inlets except the Gulf of California and few islands of any size

or importance. The western boundary, on the contrary, is broken by a number of peninsulas and by seas that are nearly land-locked owing to the presence of a long series of islands running from Kamchatka to New Guinea and beyond.

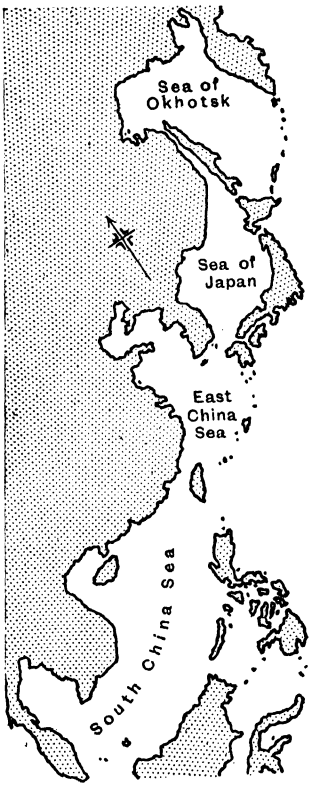

FIG. 1.—FRINGE OF ISLANDS ON EASTERN ASIA.

All round these continental shores is a belt of gently sloping submerged land, the *continental shelf*, nowhere more than 600 feet deep. This, the real edge of the several continents, is, in the Pacific, everywhere narrow, except to the north of Australia and westward to Malaya and Indo-China. Here it reaches the greatest extent in the world. Beyond the outer limits of the shelf the ocean floor slopes steeply and fairly steadily down to considerable depths.

The bed of the ocean, though more level than the surface of a continent, is not flat, but varied by mountain ranges and valleys, plateaus and plains. Across the south-east, stretching from the Antarctic Ocean to the Gulf of Panama, is a ridge known as the Enterprise or Eastern Divide, while in the north-east, 15,000 feet below the upper level of the sea, is a wide area of undulating land, a kind of rolling plain, no portion of which rises high enough to become dry land and form an islan In the south-west, on the contrary, are mountain rang

and isolated peaks, some portions of which are well above the ocean level.

A great part of the Pacific floor is marked by enormous troughs or depressions, descending steeply for thousands of feet; they lie close to the shores or to the lines of islands, which on the whole are parallel to them,

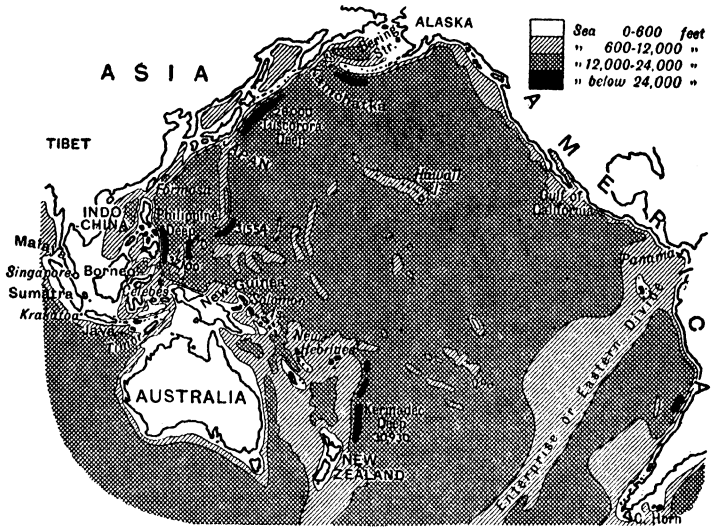

FIG. 2.—PACIFIC OCEAN DEPTHS.

and are deepest and most numerous in the region of the East Indies. Off the coast of Japan is the *Tuscarora Deep*, 28,000 feet; to the north-east of New Zealand is the *Kermadac Trough*, where a depth of over 30,000 feet has been measured; east of the *Philippines*, and named after them, is the greatest known depth in the world, 32,100 feet, that is $6\frac{3}{4}$ miles, or three-quarters of a mile greater than the height of Mount Everest, in the Himalayas, the highest mountain in the world.

Islands.—Sown thickly about the west and south of the ocean are islands too numerous to be mentioned, almost too numerous to be counted, but divisible into

two classes, the " high " or volcanic and the " low " or coral.

Most of the " high " islands are simply the summits of partially submerged volcanoes. They rise, in the Solomon Islands, to a height of 8,000 feet, in Hawaii to 14,000 feet. Numerous streams, fed by heavy rains, plunge rapidly down their sides to shores lined with extensive mangrove swamps, the haunt of crocodiles and the breeding-ground of malarial mosquitoes.

Many of the Pacific Islands, however, are " low " islands. They are built of coral, and often rise but a few feet above the waves. The commonest of these are the *atolls*, circular rings which may be 50 miles or only a few hundred yards across, and are broken, here and there, by openings that give passage to ships from the blue ocean without to the blue lagoon that sleeps within. Most of the volcanic islands are also surrounded by rings of glittering coral beach.

Islands, far removed from the continental shelf, *oceanic islands* as they are called, have never been joined by land to any continent, and whatever animals, people or plants are on them, must in some way or other have been carried to them across the ocean. Spiders, grubs and beetles have found a ferry in drifting logs ; winds and waves have transported coco-nuts that took root in the firm sand produced by the breaking, pounding and grinding of the coral rock ; seeds have been blown, or drifted, or carried by birds ; and the birds themselves have, in due time, made their homes in the tops of the palms.

Winds.—It is clear that the wind has had a great deal to do with the planting of the Pacific Islands. Winds are always important, and we shall often have to speak of them ; hence, it may be convenient, at this point, to give a very brief account of some of them.

There are four belts of winds, blowing more or less in a regular and orderly manner round the world, especially over the oceans. In the south there is a belt of winds from the north-west, known as the westerlies. These

are the commonest winds of New Zealand. Partly on account of their strength and partly on account of their latitude, they are called the Roaring Forties. They blow across the Pacific and are again the commonest winds in the southern parts of Chile. In the north there is a similar belt of winds which blow across the ocean to

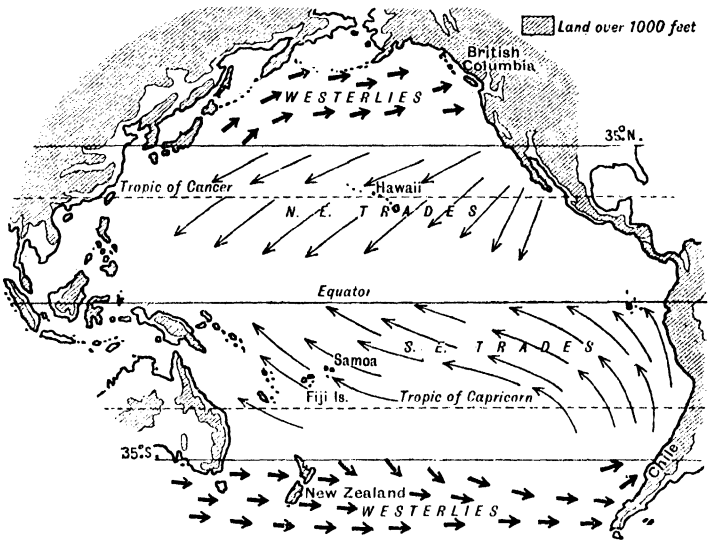

FIG. 3.—WIND BELTS.

British Columbia, this time from the south-west. In between the two belts of westerly winds are two belts of easterly winds, one on each side of the equator, blowing respectively from the north-east and the south-east. These easterly winds are so steady that they seem to follow a regular path trodden across the waters ; hence their name—trade winds.

The dividing line, in each hemisphere, between the westerly and easterly winds is about latitude 35°, but as the belts move north and south with the sun, the winds round about latitude 35° are sometimes from the east and sometimes from the west, according to the season.

Moreover, on the western side of the Pacific these wind belts, as we shall see later, are interfered with by other winds that take their place.

The little islands with which this chapter deals all lie in one or the other of the trade-wind belts. Thus *Hawaii*, north of the equator, receives the north-east trade wind almost all the year round, while *Fiji* and *Samoa*, south of the equator, receive the south-east trade wind.

Rain.—Because the trade winds, in this part of the world, blow over wide stretches of ocean, they are laden with moisture. They do not, however, bring much rain unless they rise, as they must do in the " high " islands, and are cooled. In such cases the downpour may be torrential; one of the lofty peaks in an island of the Hawaii group has, for instance, an average annual rainfall of almost 450 inches. Most of the " low " islands receive their rain in another way. Because they lie between the Tropics of Cancer and Capricorn, the sun at noon is always overhead in one or another of them. The land, therefore, becomes highly heated, and heavy thunderstorms occur; note that the greatest heat and the greatest rain come at the same time.

Temperature.—As the islands lie between the tropics, the climate is always warm, but the temperature is not so high as one might expect, because both the winds and the rain cool the air. Hawaii, for instance, is cooler in July than any other equal land area in the same latitude in the northern hemisphere. There is, of course, no such thing as seasons; summer ever reigns. Thus, in Hawaii, the mean temperature for January is about 71° F. and for July about 78° F. In fact, weather conditions, in these Pacific islands, are so steady throughout the whole year that the natives have no word for " weather."

The high temperature and the moist air are favourable to the growth of luxuriant vegetation. In the " high " islands, the mountains are often clothed to their summits in a gorgeous drapery of dense forest, the deep ravines are filled with palms, and the frowning cliffs are

a home for trailing moss and feathery fern. In the drier areas tall grass grows.

Life in Pacific Islands.—Hundreds of the smaller islands and all the larger ones are inhabited, though where the people came from is not surely known. Some of them, guided by the stars and directed by the will of the winds, may have gone from one island to another out of curiosity and a spirit of adventure, while others, when fishing, may have been caught by storms and driven far from home. If they had no means of returning they must needs have settled on the shores of some atoll where coco-nuts, turtles and their eggs, crabs and fish supplied them with food and the coco-nut palm provided them with almost everything else they needed—milk to drink—either fresh or fermented—shells for cups and bowls, fibres for mats and cloth, leaves for thatching, and timber for houses and boats.

The islanders arrived by sea and depended on the sea. Travelling by land, even in the larger islands, was difficult or impossible on account of the denseness of the forest and the ruggedness of the surface. The roads from one island to another or from one part to another of the same island were all upon the water, and the means of transport was some form of canoe.

Of canoes, there are many forms and sizes. Perhaps the commonest is the outrigger, often made with great skill, simply by hollowing out a tree trunk. After a tree of suitable size and shape has been felled, the trunk is shaped into the form of a boat and the inside chipped out with a stone adze. Near the top edge holes are bored through which poles are passed so as to stick out about 10 feet on one side. A large log, the outrigger, is then lashed to the ends of the poles in such a way that it lies on the water parallel to the long side of the canoe. The purpose of the outrigger is to steady the frail craft and prevent its being overturned, a matter of some importance where the seas are infested with sharks.

Some of the larger boats, which may be 100 feet long and carry 100 persons, are fitted with mat sails, but the

smaller ones are paddled by a man who sits, not on the boat itself, but on the poles bearing the outrigger. For trading purposes light planks are sometimes laid across the poles to form a kind of large raft that will hold a great deal of cargo.

All the islanders are skilful boatmen, fearless of either wind or wave, and it is said that parties from Samoa have, in their large canoes, paid visits to New Zealand, 1,500 miles away.

To some extent the people were dependent on the sea for food. They could not be hunters, for there was nothing to hunt, nor cattle raisers, for there were no cattle; cattle could not have been carried across the seas in the canoes by which the first journeys to the islands were made. The sea, however, provided stores of fish, and all the men were fishermen.

Even now fish are taken, not with nets, which might easily be torn on the sharp edges of the coral reefs, but with bows and arrows or a three-pronged spear attached to a cord. Fish spearing is going out of fashion in some of the atolls where tinned food is now obtainable, but in others is still followed as of old. On a moonlight night the men crowd on to the reef, armed with bows, arrows and spears, or carrying flaming torches to lure the fish into the pools. The spearman, still and silent as a marble statue, stands erect, spear in hand, till he sees the glitter of the scales beneath the water, when, with the swiftness of lightning, he hurls his weapon and captures his prey.

One writer, speaking of the people of Hawaii, says, "There are hardly anywhere to be found more expert swimmers and fearless divers, and the length of time the latter can remain under water is certainly unsurpassed. Armed with only a knife, they plunge in and combat the sharks, so dangerous in that locality. Whenever a high surf approaches the coast, they swim out into the sea, taking with them a plank fashioned expressly for the purpose, on which they ride in again on the crest of the waves. Their sharp and experienced eyes detect a

shoal of fish between the shore and the coral reefs before a stranger could see it with a field-glass."

In addition to fish the natives eat yams, taro, sweet potatoes, bananas, sago, coco-nuts, and on special occasions, roasted pork. Pigs, which were introduced to the islands by Europeans, are in some places, e.g. the *Solomon Islands*, almost as common as coco-nuts. The more pigs a man has the richer he is and the more his neighbours think of him. Taro, the chief native vegetable in Hawaii and some other islands, is grown in irrigated patches surrounded by low ridges of turf that hold up the water. The root is baked, pounded into a moist paste, mixed with water, and allowed to ferment for forty-eight hours, when it is known as *poi*.

Houses.—Houses, everywhere, though they may differ in size and shape, are all built of the things that lie close at hand—wood and leaves. In a few islands they may, for safety, be erected on bamboo poles or even built in the branches of trees, but, for the most part, they are huts on the ground. Those of the Solomon Islands will serve as a sample. Two forked tree-trunks, as pillars, support a horizontal one that forms the ridge pole. The pillars are carved with demons that guard the house and frighten away the evil spirits. Over the ridge pole are laid several flimsy bamboo poles that reach to the ground on either side. The roof, covered with thin strips of bamboo and thatched with palm leaves, is light and fragile, and may be blown off by very strong winds. The front and back are closed with thatched wicker work except for a small hole used as a doorway. Though cooking is carried on in a separate hut, no dwelling is without a fire; the smoke, having no outlet but the door, makes the interior gloomy, black and sooty, and causes sore eyes, but keeps out the mosquitoes.

The only furniture consists of a few cooking utensils and weapons, a bed made of bamboo poles resting across two logs and a number of rush mats. A fresh mat is spread for every welcome visitor, and failure to provide

such a mat is a clear hint to the caller that he is not wanted.

Meat, fish and some vegetables are cooked before being eaten, over a fire which, in the absence of matches, is procured by friction. The fire maker squats on the ground and rubs a pointed stick up and down on a slab of wood which he grips between his feet. At first, as a groove is being worn out, the movement is slow ; as the speed is increased smoking dust begins to collect, and by the time the operator is wet from head to foot with perspiration and ready to drop, the powdered wood begins to glow. A few dried leaves are added, a few puffs of breath are given, and the desired flames appear.

In these fairy-like islands, where it is always summer, the soil produces food in abundance and life is easier perhaps than in any other part of the world. Everybody seems happy and everybody sings—the fisherman in his boat, the girls in the house and the labourer in the field.

The groups of huts that form the villages are, in all cases, near the sea. In the " high " islands, like the Solomons, they are, for the sake of protection, often hidden from view, amongst the dense vegetation ; in the " low " islands they are on the inner shores of the lagoon and not on the open sea.

The People.—Though life is everywhere much the same, the people themselves belong to two different races, the *Melanesians* and the *Polynesians*. The Melanesians live mostly in the western islands that lie in a curve to the north-east of Australia, that is, in the Solomon Islands, *New Caledonia*, the *New Hebrides* and the *Loyalty Islands*. The Polynesians inhabit the more easterly islands, Samoa, *Tahiti*, *Tonga*, *Marquesas* and Hawaii. Fiji, near the junction of the two groups, has a varied population, but the majority are Melanesians. The dividing-line between the two peoples is, roughly, the meridian of longitude 180°, though New Zealand, by reason of its Maori inhabitants, is to be included in Polynesia.

The Melanesians are short, dark-skinned and woolly haired, something like the negroes of Africa, and are fond of fighting. At one time head-hunting and cannibalism were common, and even formed a part of the religious life. When heads were needed for some religi-

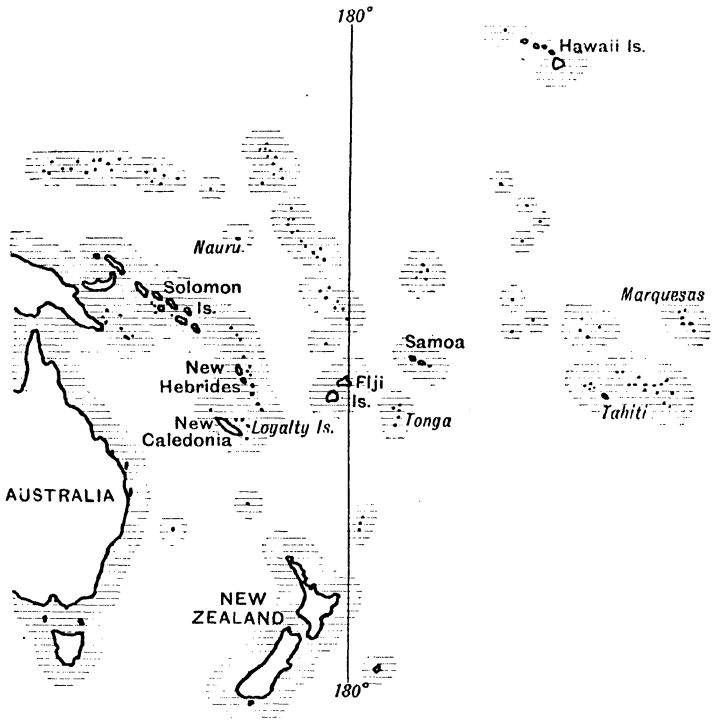

FIG. 4.—THE ISLANDS OF THE WESTERN PACIFIC.

ous ceremony, the warriors, in the dead of night, would launch their big war canoes, paddle round to a nearby village, land quietly, take the people by surprise, and kill every man, woman and child upon whom they could lay their hands. Then, carrying the bodies with them, they would return home to indulge in a great but horrible feast. As a result of these bloodthirsty raids,

some of the smaller islands of the west lost almost all their inhabitants.

The Polynesians have light brown skins, wavy black hair, dark eyes, and clear-cut features very much like the people of the south of Europe. They, too, were once great fighters, like the Melanesians, but, as a rule, they fought only in self-defence or to avenge a wrong. They are a cheerful, happy race, friendly to new-comers, and much given to singing and dancing. They are clean and orderly in a manner not common amongst primitive peoples and they were never cannibals.

In the warm climate of the southern seas not much is needed in the way of clothing, but there is a marked difference between the dress of the Melanesians and the Polynesians.

Amongst the Melanesians of the Solomon Islands the men, except when in contact with Europeans, wear a strip of palm leaf passed between the legs and fastened to a waistband of the same material. The women have the same leaf, but in addition have also a mat at the back which acts as a kind of cushion when they are squatting on the ground. The children rarely wear any clothes at all except where there are missionaries.

What the people of the Solomon Islands lack in clothes they make up in ornaments—heavy armlets, massive anklets and necklaces of shells. On some of the islands the ears are pierced at an early age and a conical shell, about as thick as a pencil, forced through each hole. By continually increasing the size of the shell, the hole is slowly enlarged, until a ring as big as a tea cup can be stuck in the lobe of the ear. Another favourite ornament is a wooden spike passed through the nose. Any old odds and ends of European garments are much sought after, and you may sometimes see a hefty native with the usual huge ear-rings and a spike through his nose, proudly strutting about wearing also a linen collar and a pair of braces.

The Polynesians are more completely and tastefully clothed ; a single garment of white cloth, decorated with

a floral design, hangs from the shoulders to the knees, while a garland of flowers round the neck and blossoms in the hair take the place of the fearsome nose-spike and the enlarged ear-lobes.

Perhaps the greatest difference of all between the Melanesian and the Polynesian is in the treatment of the women. As the former were all warriors, it was the business of the women, not only to prepare the meals, but to grow the food, manufacture the cooking vessels, weave mats and make baskets. Amongst the Melanesians, the women are the beasts of burden ; amongst the Polynesians, as amongst white people, they are companions and equals.

Changing Conditions.—During the last century, conditions, on many of the islands, have been slowly changing. Just as the islands once received their plants, animals and peoples from across the sea, so also have they received some kind of civilisation from without. Different people, for different reasons, have taken an interest in their welfare, and each has left its mark upon one or more of them. The missionary has mended the manners of some of the people to such an extent that the Fijians, for instance, once cannibals, have been described as the Frenchmen of the Pacific. The planter has, here and there, so far improved agriculture, that the products of some of the islands now find a place in the markets of the world ; Hawaii produces large quantities of sugar, as do the Fiji Islands, Samoa a certain amount of cocoa, and most of them export copra, the dried flesh of the coco-nut.

Chinese and Indian merchants have opened village stores and come also to work as agricultural labourers, or as miners amongst the valuable deposits of phosphate in the island of *Nauru*. Trading schooners ply regularly between the islands, collecting copra, sago and pigs, and leaving in exchange cotton cloth, steel tools and other manufactured articles.

No longer do the islanders live to themselves and depend on themselves. Here, as everywhere else in the

world, changes are always, if slowly, taking place. Sometimes the change is great, as is the case when the cannibal becomes a Christian; sometimes it is less important, as when the people in the Marquesas Islands, away on the outer fringes, replace their roofs of thatch with uglier but more lasting ones of corrugated iron. But there would be little or no change if there were no movement of somebody from place to place. It is only by moving that men meet and exchange ideas, and, by exchanging, learn.

CHAPTER II

THE EAST INDIES AND INDO-CHINA

In the previous chapter we have dealt with the scattered groups of small oceanic islands in the south-west of the Pacific Ocean. In this we shall give our attention to those larger islands that lie between Australia and Asia and to the peninsular portion of the south-east of Asia.

Mountain Rim of the Pacific.—Now, one of the most striking features about the rim of the Pacific Ocean is the presence of an almost complete border of mountains (see Fig. 3) and the complete absence of great lowlands such as open out on to the Atlantic. From Cape Horn, the southernmost point of South America, the Andes run northwards, parallel to the coast, as far as Central America. Under the name of the Sierra Madre, the mountains are continued through Mexico to join the Western Cordillera of North America that runs north-westwards to Alaska. Between Alaska and North-east Asia is a gap filled by Bering Strait, giving access to the Arctic Ocean, but across the gap are long peninsulas and strings of islands reaching out to each other.

On the Asiatic side, where the land has sunk, the completeness of the mountain rim is not quite so striking, but the higher parts, left standing above sea-level to form a fringe of islands, show that it passes through *Kamchatka*, the Japanese islands, *Formosa*, the Philippines, *New Guinea* and the *New Hebrides* to New Zealand. Another system of mountains strikes south-eastwards from Tibet, and runs through the *Malay Peninsula, Sumatra, Java* and the other *Sunda* islands

to Australia. There are, too, other systems of mountains in China running from north-east to south-west. Where these systems converge towards each other they become very confused and difficult to follow.

Volcanoes.—Most of these mountain ranges are caused by up-bending or up-folding of sections of the earth's surface, just as the great deeps in the ocean are caused by downfolds. Along the top of such an up-fold there may be cracks, and at any rate it is weaker than

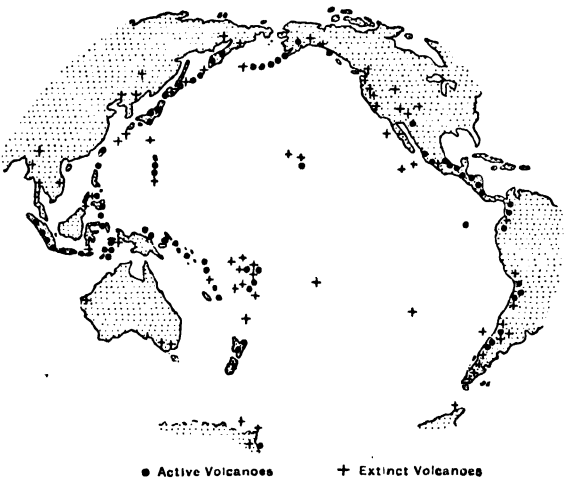

FIG. 5.—VOLCANOES ROUND THE PACIFIC.

elsewhere: along such a weak line water tends to sink in, especially if it is in a rainy region. Then, as it is very hot in the interior of the earth, when the water sinks far enough down it is turned into steam and sometimes, being under considerable pressure, "blows up" and forms a hole. This hole is a volcano. With such a confusion of folds and consequent lines of weakness in South-east Asia near and in the sea, it is not surprising that the region suffers from earthquakes and volcanic outbursts. Sumatra, Java and Timor are all centres of volcanic activity.

In the little island of Krakatoa, between Sumatra and Java, where two lines of weakness cross each other, occurred one of the most notable of modern eruptions. In 1883 the volcano on Krakatoa became extremely active, blew off its own head, and allowed the sea to flow in over the molten lava in the crater. In the almost unbelievable explosions that followed, no one

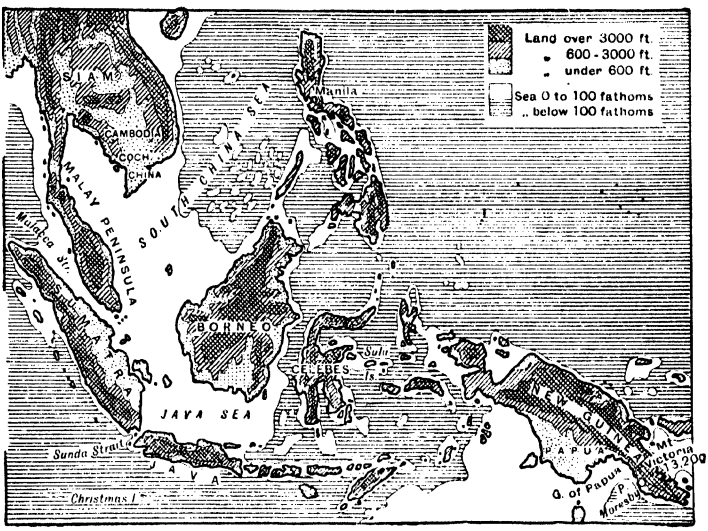

FIG. 6.—EAST INDIES, SHOWING THE SHELF AND RELIEF.

within many miles was left alive to tell what had happened, but we know that enormous waves washed inland over neighbouring coasts, destroying towns and villages and drowning 36,000 people. Forests on nearby islands were buried beneath stones and dust, and new islands were formed in the sea by the accumulation of the rocks hurled out from the volcano. The sky was darkened in Batavia, 100 miles away, and the noise of the explosion was heard 3,000 miles away, on the coast of Africa. Air waves were set up which travelled three times round the world one way and four times the other. Stones and dust

were thrown 17 miles into the sea, and fine dust, shot high into the air, was carried all round the globe, causing most magnificent sunsets for months afterwards.

Relief.—Some of the peninsulas and islands stand on the continental shelf, while others rise up out of the depths of the ocean. Hence, though the highland skeletons, e.g. of *Borneo* and *Celebes*, are very similar, their out-

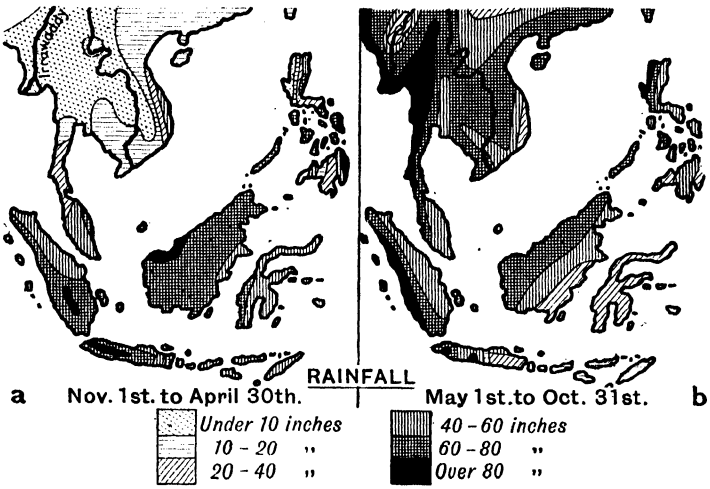

FIG. 7.—EAST INDIES: RAINFALL.

lines on the map are strikingly different. Borneo is on the shelf; the coast is less indented than that of most of the other islands, and the bays are usually filled with alluvium brought down by the numerous rivers; there are few deep bays or harbours except in the north. Celebes, on the other hand, is in deep water; the Celebes Sea and the Banda Sea occupy a huge abyss which is, in parts, 700 miles wide. In this case all the lowlands have been drowned, and only the tops of the highest land are above water; Celebes is "all bones."

Climate.—The climate of the areas dealt with in this chapter is everywhere hot and wet, but there are important differences between the several parts.

The Malay Peninsula and the East Indies have, on the whole, an equatorial climate, with great heat and moisture throughout the year. There is little change of temperature from month to month, and, as in the small islands, no such season as winter. The heat is, however, modified by sea breezes and also by altitude, for much of the surface is more than 1,000 feet above sea-level. What difference there is in the seasons is between "wet" and "wetter." The ground is intensely heated, but there is a supply of comparatively cool air from the sea, which pushes in under the air warmed by the land. The air which is raised is expanded and cooled, and deposits, very largely in thunderstorms, a heavy rainfall, usually as much as 100 inches in a year.

Indo-China, on the other hand, has two quite different seasons, caused by the two "monsoon" winds, with which we shall deal more fully in the next chapter. From May to September the south-west monsoon brings heavy storms and a rainfall of 200 inches and more to the basin of the *Irrawaddy*. From September to March the north-east monsoon brings dry weather cooler breezes.

Vegetation.—The heat and moisture are favourable to the growth of a luxuriant vegetation. The closely growing trees, in their struggle to reach the light, shoot up to a great height, and sometimes at a great rate, before giving off any branches. The bamboo, which is, after all, but a kind of grass, has been known to grow, like an enormous asparagus shoot, at the rate of a foot or more a day, and in three months to tower above the tops of many of the other and older trees. Within the forks of the branches grow ferns in infinite variety, while from the branches themselves creeping vines, of anything up to 15 inches in thickness, hang in loops and festoons, coil themselves round their supports, and generally link the dense foliage above with the dense undergrowth below.

On the damp, gloomy ground, above which rise the stems of ebony, cedar, logwood, rubber, bamboo and

palm, is a thicket of impenetrable rattan palms and low bushes, through which, if a traveller would pass, he must cut every step of his way, at the same time receiving the assaults of ants, black and red, and many other kinds of small insects that bite and sting like red-hot needles, and the possibility of an even more deadly encounter with a poisonous snake.

People.—On the whole the people are much like those described in the previous chapter, except that perhaps the tribes that live farthest from the sea are rather less civilised.

In the Malay Peninsula and the Malay Archipelago the chief native inhabitants are the Malays, a people with brown skins, black hair, large mouths, short, flat noses, slight but well-formed limbs, and usually of short stature. Some are farmers, some are fishermen and some are pirates. Some are peaceful, others bloodthirsty and revengeful; in Sumatra, Celebes and Borneo there are tribes of cannibals.

In British New Guinea, or *Papua*, are the frizzy-haired Papuans, a Melanesian people who, in their general appearance and customs, are akin to those other Melanesians already described. Their chief amusement seems to be the taking of human life, just for the fun of the thing and not because they are cannibals, for, though cannibalism exists, the extent of the practice has probably been much exaggerated. Under British influence the eating of human flesh is being suppressed and murder is decreasing.

In *Borneo* one finds the Dyaks, with whom head-hunting was formerly a favourite pastime. It is said that even now, though many of them are peaceful farmers, they will sometimes indulge in a head-hunting expedition. The heads are kept in huge barn-like structures known as the "head-house," and any visitor whom it is desired to honour sleeps in this gruesome chamber.

In the *Philippine Islands*, only twenty-five of which are big enough to be of any importance, there are, separated by the forests, about eighty different tribes, speak-

ing not fewer than forty different languages. In the dense forests of the interior there are a few, but very few, people—savages who resemble the pygmies of Central Africa in size and manners. They are nomadic hunters, using tools and weapons of wood, bone and shell, and dwelling in movable houses or tents made of matting.

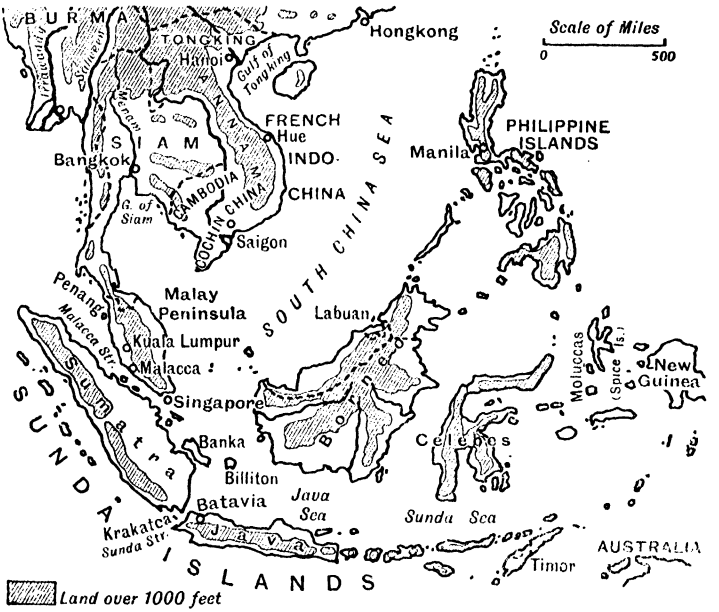

FIG. 8.—EAST INDIES AND INDO-CHINA RELIEF.

In some parts of the mountains, where the population has much increased, the people have been forced to become farmers in order to raise enough food, and, though uncivilised in other ways, they have cut the mountain sides into huge platforms of soil upheld by walls 20–30 feet high. On these platforms rice, irrigated by water from the mountain streams, is grown, and everybody, men, women, and children over the age of ten, has to labour long and hard to produce sufficient to eat.

The houses are of bamboo and grass built high above the ground, sometimes in the trees, in order to be out of the reach of both floods and enemies. The living-rooms are reached by means of bamboo ladders or notched poles that are pulled up at bedtime. Food, chiefly rice or fish, is eaten sitting on the ground, and the domestic animals are stabled under the house.

The more civilised tribes live on the coast, and, as life is easier there than in the forests, 65 per cent. of the people in the Philippines are to be found in close touch with the sea. Down on the lowlands the dwellings are on poles ; swine, cattle, ducks and fowls are kept, rice is grown and men go fishing.

Of all the East Indian islands the most densely populated is *Java*. In size it is a little smaller than South Island, New Zealand, but it contains about seventy times as many people. Of its 35 million inhabitants about 34 millions are of Malay stock, though they are known by different names in different parts of the island.

Besides the various primitive peoples already mentioned there are, particularly in Indo-China, others who are the heirs of an ancient civilisation. In Malaya there are now so many Chinese that they form a majority of the population. The inhabitants of Indo-China are Mongols, like the Chinese and Japanese. They have yellowish-brown or olive complexions, broad flat noses, obliquely set, deep-sunken eyes, lank black hair, little beard, broad, square, thick frames, and an average height less than that of a European.

They came down into Indo-China through the valleys of the *Mekong*, *Menam*, *Salween* and Irrawaddy from lands that were cold, dry and treeless into fertile plains, dense jungle and a hot, wet climate. The high mountains, with their densely forested slopes, separated one group from another, and, in fact, made any communication between them almost impossible. Each group, in its new and easier surroundings, lost much of its original energy and skill, but is still, from the point of view of

civilisation, much superior, not merely to the head-hunters, say, of Borneo, but even to the courtly Fijians or the pleasant Samoans. In Burma, Siam and Cambodia buildings of great age, and of great merit as architecture, speak of a life that has had other interests than hunting or fighting or even tilling the ground.

Siam.—As large parts of Indo-China consist of plains that are under water when the rivers rise, the people, while having to live near the fields, have also to keep out of the way of the floods. Houses, therefore, are often boats, or larger structures on rafts, or even still larger dwellings, much like those on the rafts, but raised on piles on the land. They are, usually, made of teak or bamboo, and thatched with various kinds of palm leaves.

Roads are mainly water roads, and in Siam there is only one native form of land vehicle. This, a long, narrow cart with large wheels to keep it out of the water when it has to cross a stream or flooded plain, is made entirely of wood, may have a canopy to protect the driver or the people inside from having their heads cracked by overhanging trees, and is pulled by oxen or buffaloes. In the towns, however, there are Indian carriages called *gharries*, pulled by ponies, giant perambulators, called *rickshaws*, pulled by men, and, in Bangkok, the capital of Siam, and in certain other cities, there are now even motor-cars, 'buses and electric tramways.

The dress of the Siamese is simply a long strip of cloth, about the size and shape of a bath towel, draped round the lower part of the body, with the addition, in the case of the women, of a coloured scarf across the chest. Shoes, stockings, hats and gloves are not needed, and are usually not worn.

Food is rice, fish and fruit, and as rice is tasteless, the fish is kept long enough to ensure it supplying what is necessary in the way of flavour, while pungent sauces are added for the further tickling of the palate.

Buddhism.—The chief religion of Indo-China is Buddhism, founded in India by Buddha, "the Enlightened,"

the son of an Indian prince, born about five or six centuries before Christ. Shocked by the sin and misery of the world about him, he became a hermit, and, whilst living in loneliness and meditation, taught certain truths and laws that make up the religion called Buddhism. The aim of this religion is to teach the state of Nirvana, when all desire, and all feelings of pain or pleasure are lost. Nirvana can be reached only by a complete indifference to pleasure and the conquest of all worldly wishes, and, until this has been done, man must be born again and again, but not always as a man: he may, in fact, be reborn as a beetle or any other humble creature. All this is very different from anything to be found amongst the believers in ghosts and evil spirits in the sunny isles of the Southern Seas.

Outside Influences.—All these peoples, however, whether savages in the interior of the larger islands, or the more civilised folk of parts of the Indo-China peninsula, like the people dealt with in the last chapter, no longer live to themselves. The Chinese have spread everywhere: in Siam they do most of the work, except farming; in the Malay Peninsula they work in the mines; everywhere they are traders. The United States has governed and educated the Philippines. The Dutch have converted Java into a great garden for the cultivation of equatorial products for European markets. The French have made another, but little, Paris in the capital of *Cambodia*. The English have brought schools, traders and ideas of good government to the Malay peninsula, and, for many years, were more or less completely in control of education in Siam. Wherever any of these peoples go they take new ideas, new ways of living, new forms of government which the native peoples often copy and adopt.

People Remain Farmers.—But whoever comes bearing a new message of how to live, the great bulk of the people remain farmers. In the low coast-lands, whether of Siam, the Philippines or elsewhere, the chief crop is *rice*. Rice-farming, with its separate plants, pushed

into the mud one by one, by hand, is more like gardening than farming, and can be carried on, with the aid of water-buffalo, only by people who are industrious, careful and far-seeing. Such people are educated by their very employment to be thrifty and law-abiding, and, in South-eastern Asia, at any rate, all civilisation seems to be built on rice-farming.

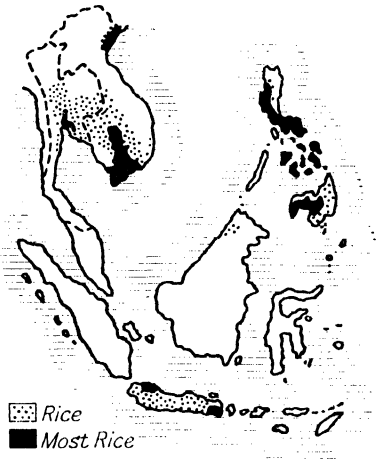

FIG. 9.—RICE IN INDO-CHINA AND THE EAST INDIES.

In addition to rice, there are bamboo, teak, coco-nut and other palms, rubber, various kinds of spices, pepper, sugar, tobacco, tea; indeed, all those plants that love a warm, wet climate, and they flourish abundantly. In the equatorial islands the most important plants are such spices as pepper, nutmeg and vanilla, and such food plants as sugar-cane, coco-nut, breadfruit and sago. The *Moluccas* (the Spice Islands of old) and *Celebes* are noted for their spices; Java grows more cane-sugar than any other country in the world except Cuba; the Phillippines are amongst the chief of the world's producers of copra and coco-nut oil.

Sago—most of which comes from Borneo—is the pith of a palm. The yield is so great that a month's work will produce twice as much sago as a native needs for a year's supply. He can, therefore, easily feed himself and his family, and, at the same time, also provide a large quantity for export.

The breadfruit tree is almost as great an excuse for laziness, for six of them will support a family. It is, however, no longer the staple food it was, for tinned-goods, flour and other imported foods are in favour.

Tobacco is grown in large quantities in the Philippines, and Manila cheroots and cigars are almost as well known as those of Virginia and Havana. Though much is exported, the greater part of the crop is consumed at home. All the Filipinos, men, women and children, smoke; in many houses a huge cigar hangs from the roof by a piece of string and father, mother and the rest of the family each take a pull at it when the spirit moves them.

The Philippines have one plant which does not seem to grow so well anywhere else. It is a kind of banana, from the stalks of which a long, strong fibre is obtained. This is sold as "Manila hemp," though the plant has no relation to the true hemp family. It is used in the manufacture of ropes and cordage, and is so much superior for this purpose to all other fibres that Manila hemp is a much more valuable crop than tobacco.

In Indo-China rice is the most important food crop, but coffee plantations are found in the hills of Annam, sugar plantations in Annam and Cambodia, and rubber plantations in Cochin China, and, more particularly, in the Malay Peninsula.

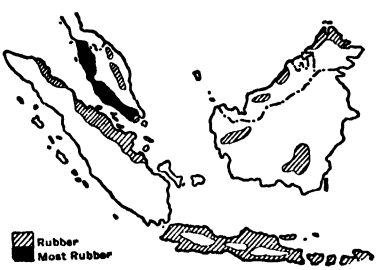

FIG. 10.—RUBBER IN INDO-CHINA AND THE EAST INDIES.

The most striking of the plantation products is *rubber*, which, in recent years, has been so successfully cultivated that a region, which once grew no rubber at all, now produces more than any other part of the world. The seeds are sown in nursery beds or seed baskets, and the very young plants are transplanted during the rainy season, when there is no danger of loss of moisture. They grow so quickly that cases are known of a height of 20 feet having been reached within one year.

About four years after planting the trees are ready for tapping. Special knives and collecting cups have been invented, and science has been called to the aid of industry. At the factories the juice or *latex*, a milk-like fluid, is strained to free it from bark, twigs, leaves and dirt, poured into flat pans, and converted into a solid mass by means of acetic acid. It is then treated in various ways according to the quality of the rubber desired or the purpose for which it is to be used.

Minerals.—Besides all these vegetable productions, the region possesses rich stores of minerals. Labuan has supplies of coal; *Banka* and *Billiton* (dependencies of Sumatra) and the Malay Peninsula have enormous quantities of tin. More than half the world's supply of *tin* is mined by Chinese in the Protected Native States of the Malay Peninsula.

Islands not Small nor Unimportant.—Looking at these islands and peninsulas on a small-scale map we are apt to think of them as small and unimportant. But they are neither the one nor the other. Indo-China is comparable in size with India or China; Sumatra is 1,000 miles long and 300 broad; New Guinea is as large as New South Wales; Java is twice as large as Victoria and has four times the population of the whole of Australia. As already pointed out, here, too, especially in Indo-China, there is an old civilisation that commands our respect.

As we have seen, this is an extraordinarily productive area. These islands were the Indies that tempted the early adventurers to come for spices, and here the Dutch remain, in full control over almost all of them, with an empire comparable to that of Britain in India. What can be done is seen in Java. "Is there any other country in the world in which Nature has been so prodigal of her fruits? Is there any other people than the Dutch sufficiently experienced to understand so many crops?" But what has been done is nothing to what may be done. Indo-China and the East Indies are as fertile and productive as, say, Central Africa or the

Amazon Valley, and, owing to the fact that the region is one of islands and peninsulas, it is much more easily reached by ships. Finally, the better organisation and the higher civilisation are favourable to a rapid development, as is seen by the way in which rubber growing has advanced.

But it must be emphasised that all the organisation and all the capital is supplied by foreigners—British, French, Dutch, Americans, Japanese and Chinese. The people of the region are themselves responsible for little except labour, and even in this direction Chinese and Indians are more important than either Burmese and Malays or any of the native islanders.

Ports and Cities.—An area that supplies such valuable goods in large quantities must, of necessity, have ports, but these are either wholly or largely of foreign origin.

The chief port and capital of the Philippines, *Manila*, is on the island of Luzon, where half the total population of the archipelago lives. The Philippines were first conquered by the Spanish, who ruled them for several centuries, and have left many memories of their occupation behind them in the older buildings. Some of the houses have iron-latticed windows on the ground-floor and shutters painted in little coloured squares on the second-floor, like those in many streets of Spain, but because of the earthquakes many of them are of wood, lightly built and not very high.

The old city of Manila was surrounded by walls and a moat, but when the place came into the hands of the United States, the damp moat, the breeding-place of mosquitoes, was filled in. Inside the walls are churches, convents and a cathedral built so solidly of stone as to resist earthquake shocks.

All the industries of the island—cigar-making, sugar-refining and the manufacture of hemp—and almost all the trade are centred in Manila, which has a magnificent harbour facing the mainland of Asia, and at the focus of routes from Hong Kong, Singapore and Australia.

Batavia, the chief town in Java, commands the Sunda Strait between Sumatra and Java. It is an Oriental town where canals and a few brick houses with huge gables tell of the presence of the Dutch.

Bangkok, the capital of Siam, is 40 miles away from the mouth of the Menam. A bar of sand prevents large vessels reaching the city, and goods are transported into smaller boats, or "lighters" as they are called. Bangkok, which focuses a number of routes by land and water, is probably the largest city in the whole region dealt with in this chapter. It has broad, straight business streets, and mile after mile of palace, garden and villa, "reached by immense avenues of perfect roadway bordered by great trees which give shade from the fierce sun." Here are modern houses suited for Europeans living in such a land, wonderful native palaces of extraordinary architecture, and shrines which are the equal of anything of the kind in the world. A city with telephones and electric tramways, and English names to the streets!

Hue, the capital of Annam, suffers from the fact that it is on a coast rendered dangerous by storms and strong winds, and is the least important of the Indo-China ports.

Hanoi, the capital of Tongking, is the port, not only for Tongking, but also for Western China. The rich province of Yunnan has difficult communications with the rest of China, on account of the north-south direction of its mountain ranges, and it is more convenient to export the minerals which are obtained in this province through Hanoi, with which it is connected by railways. Hanoi is mostly a collection of Chinese villages, but the more modern portions have a French character, due to the fact that Tongking is under French control.

Saigon, the capital of Cochin-China, also looks French and for the same reason.

Singapore.—The outstanding port and city yet remains to be mentioned. The region with which this chapter deals lies between India and China, and is im-

portant because routes, chiefly by sea, must pass through it; it is to this fact that *Singapore* owes its greatness.

Singapore, at the southern end of the Malay Peninsula, commands the Straits of Malacca and the entrances to the China and Java Seas. All vessels going east to China and Japan must either pass through the Malacca Straits and so to Singapore, or through the Sunda Strait and so to Batavia: the first of these two routes is much the more used, and Singapore is the junction for more than fifty lines of steamers. Its harbour is absolutely free, and does an enormous trade with the surrounding countries, the United Kingdom and America.

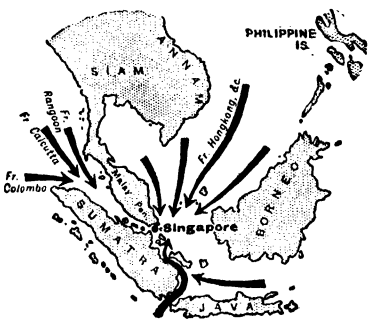

FIG. 11.—THE POSITION OF SINGAPORE.

A causeway between the island and the mainland has been constructed, and by means of railways, land routes as well as sea routes are focused at this point. It is now possible to take train at Singapore for Malacca, for the modern ports of Port Dickson, Port Swettenham and Port Weld, for the towns of Province Wellesley, for one or two points on the east coast, and even for Siam.

"The first circumstances that strike the traveller on reaching Singapore are the bustle and stir going on around, the busy Chinese hurrying hither and thither, the air of prosperity pervading all, and the rich greenness of the vegetation caused by the moist heat and the constant showers. The Government buildings are palatial; an excellent club-house overlooks the outer harbour, which is a fine anchorage sheltered from the prevailing winds, and facing the China Sea, full of ceaseless activity, cargo boats going backwards and forwards, a perfect fleet of steamers, trading with every part of the

world, loading and discharging goods, and a constant succession of small boats, carrying passengers, plying to and fro ; Chinese junks with their great brown sails, and sailing craft of every description, which trade between the numerous small thriving villages dotted around the shore of the many surrounding islands, are busy going and coming, or anchored in the distance off the beach where the native quarter reaches down to the sea. Singapore is a city of considerable size. One portion of it is taken up by the European and business community ; another by the Chinese traders and retail dealers ; Tamils, Javanese and Malays occupy other portions, and the rest of the town is composed of a polyglot collection of inhabitants, with more than a proportionate number of Chinese, as the shopkeeping and local trade of the country is principally carried on by them. The suburban residences of the merchants are some little distance from the town, and are good substantial houses, each built on a portion of the many small hills which are so numerous on the island. They stand sequestered in their own grounds, amongst beautiful and shady trees and well-kept lawns." [1]

A Pacific Problem.—Indo-China and the East Indies have, by their wealth, attracted many of the more powerful European peoples. Britain holds rule, directly or indirectly, in the Malay Peninsula ; France governs Tongking, Cochin-China and Cambodia ; the Dutch govern most of the East Indies ; the Philippines, now a Commonwealth, were once in the possession of the Spanish, and later were controlled by the United States ; Australia has interests in New Guinea ; the Japanese hold Formosa ; Hong Kong is British ; Chinese merchants and labourers penetrate everywhere.

This is a region where alien peoples of many different nationalities tend to rule, and if we look farther afield to the far-scattered islands of the Pacific, the same thing is true. Of some of these lands, such as Java, which have a fairly high civilisation or organisation, much has

[1] A. B. Rathborne, *Camping and Tramping in Malaya.*

already been made. Of those whose civilisation is backward, such as New Guinea or Borneo, comparatively little is even known, except the fact that they are occupied by many different peoples; but they can be made as productive and as populous as Java, and there is a rivalry among the alien peoples in making the most of them. Here then is one of the problems of the Pacific.

CHAPTER III

THE LAND OF CHINA

WE have seen, in the last chapter, that off the eastern coast of China there is a series of islands running from Kamchatka to the East Indies. Behind this island line are four large peninsulas, each of about the same size: (1) Indo-China, (2) China, (3) Manchuria, including the Amur province of Siberia, Korea and (4) Kamchatka. Between these peninsulas (see Fig. 1) lie four seas: (1) the South China Sea (which includes the Gulfs of Siam and Tongking), (2) the East China Sea (of which the Yellow Sea is a branch), (3) the Japan Sea, and (4) the Sea of Okhotsk. We have already dealt with the first of the peninsulas—Indo-China; in this chapter we take up the second—China.

FIG. 12.—FOUR GREAT PENINSULAS

China is a huge land containing far more people than all the Pacific Islands and Indo-China put together, yet it is much more "of a piece" than either of the regions already studied. It is more than half as big as Australia, without counting the huge dependencies of Mongolia and Tibet. Over such an immense area there are great differences of relief and climate, which, naturally, affect the lives of the inhabitants, yet the 400 million Chinese form but one nation.

Relief.—Let us first consider the relief. We are too apt to think of the

highlands of the world as being scattered about in a very irregular manner: it is truer to think of them as arranged in some sort of order. We have already seen that there is a girdle of highland round the Pacific. There is also a long series of mountain folds which runs from the eastern shores of the Atlantic to the western shores of the Pacific, and includes the Pyrenees, Alps and Himalayas.

The relief of China fits into this scheme. The western portion is part of the highland core of Asia; the peninsular portion is mostly lowland in the north

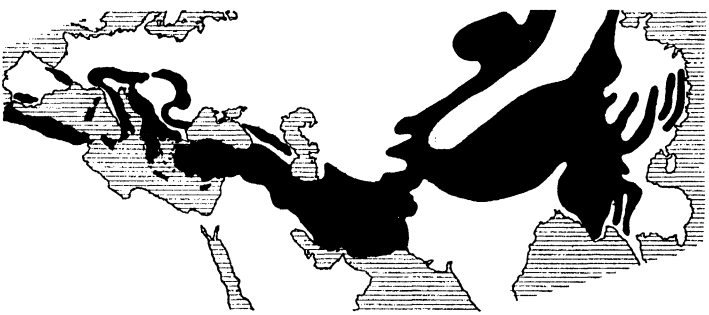

FIG. 13.—HIGHLANDS OF EURO-ASIA.

and highland in the south. The mountain ranges run, mainly, from the south-west to the north-east, parallel to the line of islands off the coast: the ridges and islands are each part of that mountain girdle which nearly surrounds the Pacific Ocean. Cutting across the north-east to south-west mountains are others lying east and west that form the water parting between the basins of the *Hwang-ho*, the *Yangtze-kiang* and the *Si-kiang*. The most mountainous part of China is the province of Yunnan, through which the Yangtze-kiang, Mekong and Salween hurtle their way, by means of deep parallel gorges, to the gateways of the sea. Between these gorges rise parallel mountain ranges,

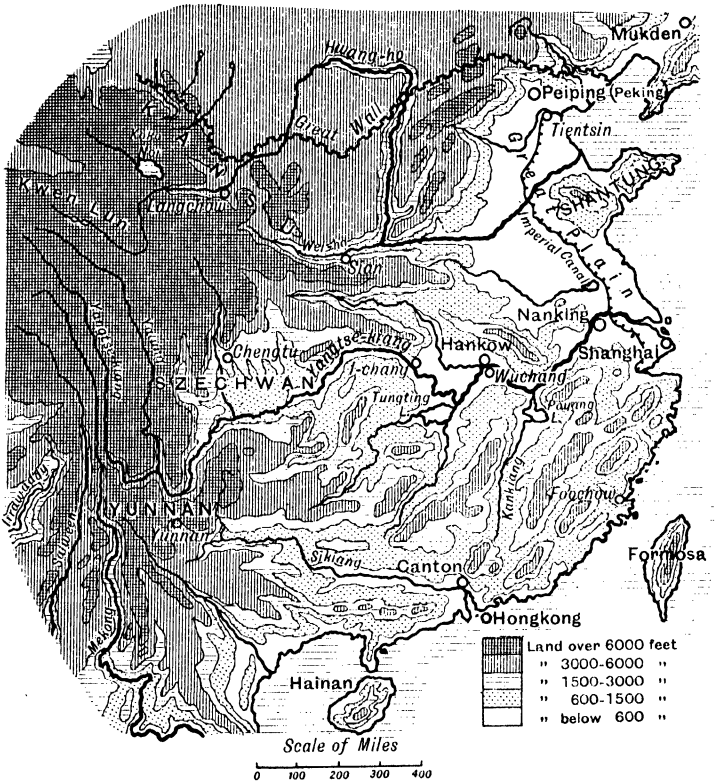

FIG. 14.—CHINA: RELIEF.

their lower sides clothed with forest, their summits, 12,000 feet or more above the roaring torrents from whose beds they rise, covered with snow.

Rising out of the lowlands of the north is the highland peninsula of *Shantung* (or "Eastern Mountains"), once an island in a shallow sea, but now joined to the mainland by the silt brought down by the Hwang-ho or Yellow River. Its trend, from north-east to south-west, that of the highlands of Eastern Asia, should be noted.

Climate—The climate, like the highlands, also

follows a certain kind of order, but it is not like that seen in the Pacific Islands. *Peiping* (or Peking) is well north of latitude 35° in the latitude of the belt of

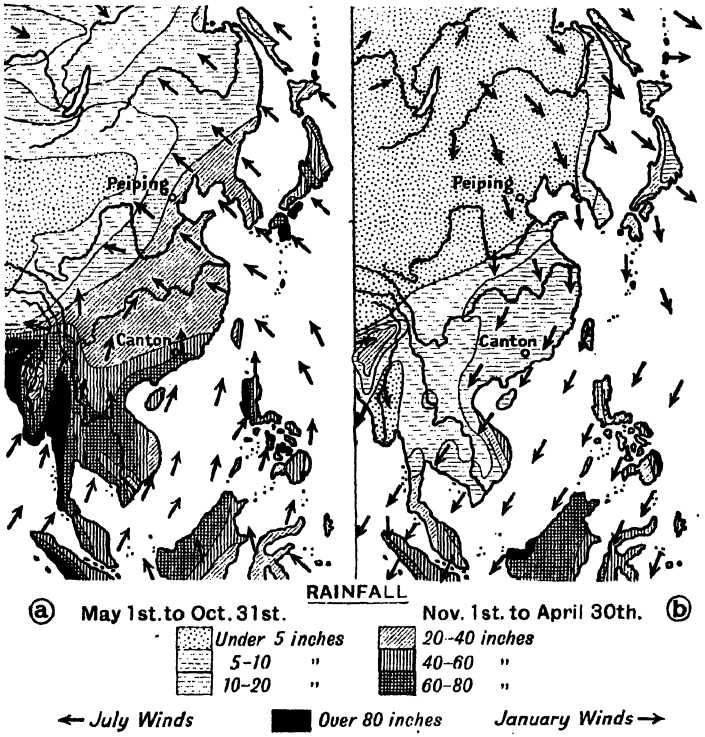

FIG. 15.—WIND AND RAIN OVER EASTERN ASIA.

westerly winds, and Canton, almost on the Tropic of Cancer, is in that of the belt of the north-east trades, yet neither of these places regularly receives winds from these directions. The place of winds that blow fairly steadily throughout the year has been taken by the *monsoons*, winds that blow in one direction for one half of the year and then in an exactly opposite direction

during the other half. For this unusual happening there must be some reason. What is it ?

The amount of land in Asia is enormous, and, during the summer, when the sun is north of the equator, those parts of the continent that are far removed from the sea become extremely hot. Then the cooler, heavier air from over the sea presses inland and raises the warmer, lighter air over the land. The wind, however, does not blow straight inland : like all freely moving things in the northern hemisphere, it tends to be turned to the right. It therefore blows, over China, from the south-west in the south and from the south-east in the north. This is the summer monsoon.

Towards the end of June the sun, at noon, is overhead at Canton. The high temperature that follows is not very much lowered by winds from the sea, for these are coming from warmer regions of the globe. In their passage across the Pacific they have become laden with moisture, and, as they rise over the coast to the highlands beyond, they drop a very heavy rainfall. This rainfall decreases towards the north-west, but for the whole of China summer is both the time of greatest rainfall and of greatest heat.

As winter approaches and the sun moves southwards, the interior of the continent rapidly loses its heat, while the waters off its shores keep much of theirs. The cold land then cools the air above it, and the heavier, cold air tends to press outwards to the sea with considerable force. The wind, turned to the right, now comes from the north-west. This is the winter monsoon, and as it blows from an intensely cold interior it brings icy blasts, particularly to Northern China. As the winter winds blow from the land they contain little moisture, and as they blow towards the ocean and are gradually becoming warmer they are drying winds. For the whole of China winter is both the time of lowest rainfall and lowest temperature.

If we leave out the highlands of the west, we can divide China into three very different regions of

climate, one for each of the basins of the three great rivers :

1. The basin of the Hwang-ho has a warm summer but a very hard winter, during which many of the lakes and rivers freeze. Peiping (or Peking), which is slightly nearer the equator than Wellington (New Zealand), has over three months when the average temperature is below freezing-point, and the Pei Ho (or North River), the river on which it stands is, in mid-winter, often covered with a sheet of ice that may be two feet thick.

2. The basin of the Yangtze-kiang, being farther south, has longer and warmer summers and milder winters, but there may be frost and even snow during the cold season, and in December, at *Shanghai*, white people are glad to wear overcoats and other warm clothing.

3. The basin of the Si-kiang, being still farther south, has even longer, warmer, wetter summers and milder winters. In Canton ice is unknown, and, on the one occasion when snow fell, the people thought it was a new form of cotton-wool.

The harsh winters of parts of China have had some interesting effects on the lives of the people in those regions where severe cold is felt. As the use of coal is not very widespread and timber for fuel is scarce, many things that cannot be eaten are burned to provide warmth. Some bean stalks and rice straw are pulled up by the roots, after the crops have been harvested, and fed to a fire underneath a kind of brick platform which is used as a sofa in the daytime and a bed for the whole household at night. Because there are few or no sheep, the place of woollen winter clothing is taken by several garments, worn one on top of the other, the outer ones being padded with unspun silk or cotton till they look like eiderdown quilts.

Routes.—China, like the Pacific Isles, could be, and was, reached by sea. Hundreds of years ago those Arabs who lived on a narrow fertile strip on the east of the Arabian desert developed seafaring and trading habits,

and crossed the Indian Ocean to India, the East Indies and China. As they came from the west the first entrance they reached was the mouth of the Si-kiang, where they founded, as early as the eighth century, a trading station at Canton.

China, however, unlike the Pacific Isles, could also be reached by land, and received its first inhabitants by a land route. The ancestors of the present Chinese possibly came from the Tarim basin in the west and

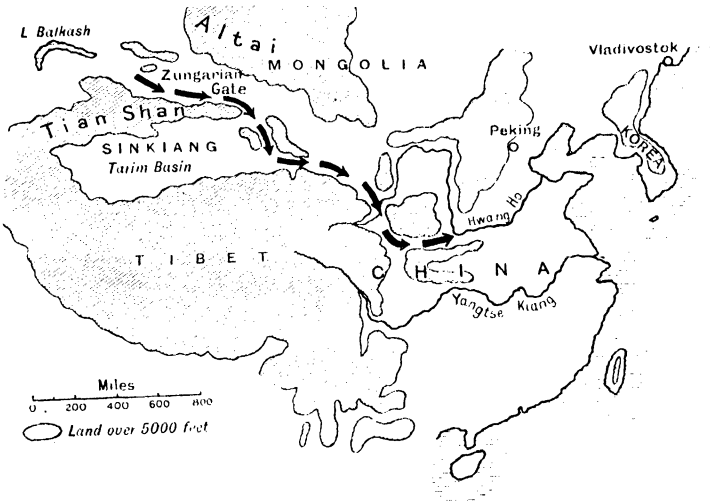

FIG. 16.—THE LAND APPROACH TO CHINA.

some may have been steppe dwellers who migrated to the more fertile lands of China when their own home-land, many centuries ago, suffered from droughts that grew ever more and more severe. Being compelled to move, they chose the easiest route they could find. From the Kirghiz steppes of Southern Russia a passable route leads through the *Zungarian Gate*, over the plateau between the *Tian Shan* ranges on the south and the *Altai Mountains* in the north, through *Langchow* on the Hwang-ho and thence along the *Wei Ho* ("Clear

River ") (Fig. 14), a tributary of the Hwang-ho, to the Great Plain.

It may have been along the Zungarian route that the wandering tribes advanced, and along this way slow-moving caravans, in large numbers, still pass to exchange the agricultural products of China for the pastoral produce of the steppe lands of Russia. Yet ancient as is this important thoroughfare, it is still without any railway. The only way of reaching China by train from the west is the Trans-Siberian Railway which, at Harbin, sends off a branch that passes through the Manchurian plain to *Mukden* and Peiping.

To return to the valley of the Wei Ho. It leads westwards along the northern edge of Tibet, where a few streams can be used for irrigation and is included in the province of *Kansu*, which, together with all the plateau that owned Chinese rule, was protected from invasion from the north and west by the Great Wall.

The Great Wall, a very real obstacle two thousand years ago, is of stone and earth, faced with brick, 1,250 miles long, from 10 to 30 feet high, and wide enough to allow of four horses being driven abreast on the top of it. There are turrets every two or three hundred yards which overlook the wall in both directions, and stone staircases from near each turret to a door on the ground. The wall goes up hill and down dale, and crosses rivers and plains, with a kind of splendid scorn for every difficulty that it meets.

The Chinese, in time, spread all over the country, but settled down to live in the lowlands, where the conditions were favourable to agriculture. There are three main lowlands—North, Central and Southern—one in the basin of each of the three main rivers. As already pointed out, they have different kinds of climates, and, therefore, they will grow different kinds of crops.

The Great Plain.—North China may be looked upon as the delta of the Hwang-ho, a mighty river whose course from Tibet to the sea includes a narrow, rocky

gorge, a level dust-covered highland and a level alluvial plain.

From the high, dusty interior of Tibet, the winter monsoon winds have for centuries carried eastwards enough dust to fill up valleys and bury hills under a covering hundreds of feet deep. These wind-blown deposits, known as *loess* (German *loose*), have solidified into a kind of porous rock, covering great areas, whose surface is very flat where the valleys used to be, but rises to the borders of the uncovered mountain ranges. Travel across the region is exceedingly difficult as the rivers have carved their way through the loess, right down to the old rock surface, and now flow through steep-sided valleys, while the road traffic also has cut a series of ravines with vertical sides.

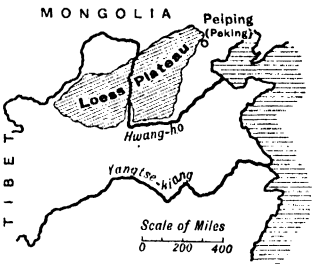

FIG. 17.—CHINA: DISTRIBUTION OF LOESS.

The loess country is naturally fertile, for the plant foods that it contains have never been washed out of it by rain. It is not productive, however, unless watered, and watering is not an easy matter, for irrigation is difficult owing to the depth of the river valleys and the occasional failure of the rain. Nevertheless, millions of people live in the valleys, in whose steep sides, dwellings, remarkable for their warmth in winter, their coolness in summer, and their dryness at all times, have been excavated. Being tucked away, below the level of the flat, cultivated, and unfenced land, the cave-like dwellings are hidden from the view of a traveller up above, and it is only when the people are at work on the farms that the country appears to possess any inhabitants.

Where broken up by the weather the loess is a loose, crumbling, yellow kind of earth, which stains everything its own colour: soil, river, houses are all yellow.

One of the titles of the old emperors was "Yellow Lord"—yellow is the national colour—and the "Yellow Sea" receives the Hwang-ho or "Yellow River." This river brings to the sea over 200,000 tons of silt a day, and has made it so shallow that fishermen may be met, on stilts, miles out to sea, long before the low coast is sighted.

The Great Plain, the richest and one of the most thickly peopled plains in the world, has been built by the Hwang-ho with heavy loads of fine silt brought down from the mountains, while much of the southern part of the plain has in its turn been covered by wind-blown loess. It is this yellow, agricultural plain that is the real China. The silt, which is always being deposited, is always raising the bed of the river, so that in time of heavy rains the waters overflow. To prevent the flooding of the nearby land great embankments have been built. To hold the soil of the embankments together and to make the greatest possible use of every inch of land, willows and other shrubs have been planted. But the more the river is embanked the more it tends to raise its bed, and, despite all precautions, the embankments sometimes give way, terrible floods follow, and the river changes its course. In 1852 there was such a flood, and the mouth of the river moved 300 miles from the south side of the Shantung Peninsula to the Gulf of Pechili. Of course the drainage took many months to effect, and was not completed for some years. In 1887 another flood destroyed three thousand crowded villages and caused the death of seven million people. On account of these floods, and the damage they do, the Hwang-ho has been called "China's Sorrow."

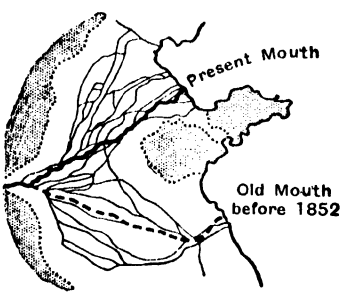

FIG. 18.—THE HWANG-HO, SHOWING CHANGES OF COURSE.

On the whole, despite the bitter winds of winter, the valley of the Hwang-ho is a temperate region. The summers are warm enough to allow cotton to be grown in most areas and rice in the southern districts. The common trees are birch, beech, oak and willow, and the common crops, cereals like barley, wheat and millet, especially millet, and fruits like apples.

Central China.—Another lowland, even more suitable for human occupation, is Central China, the lower portion of the valley of the Yangtze-kiang, or "Blue River," which flows eastwards in a series of stretches alternately south-east and north-east. This river rises in Tibet, but little is known about it until it reaches the province of *Yunnan*, where it flows for many miles as a swift unnavigable river in an almost impassable gorge. At Sui-Fu it leaves its mountain track and enters the Red Basin of *Sze-chwan*, a fertile plateau enclosed by a mountainous rim on which much tea is grown.

The Yangtze-kiang, in the province of Sze-chwan, is sometimes navigable by junks, but it is of far greater use for irrigating the fertile red farm lands that support another dense population. On these lands three crops can be grown each year; rice and millet are the chief summer crops, wheat and beans the chief winter crops. On the embankments, built to prevent floods, mulberry trees that hold the soil together produce a rich harvest of leaves. These leaves are fed to silkworms and Sze-chwan has become a great silk-producing province. Minerals are also important: coal and salt are mined, and gold dust has been found in the river-bed; hence the name "River of Golden Sand."

The mountain rim of the rich, fertile, plateau basin of Sze-chwan is a great handicap to the transportation of its wealth. The Yangtze-kiang first leaves the plateau by a long, deep gorge bounded by nearly perpendicular cliffs broken into fantastic forms. In clefts in the sides of the gorge there are fields and brown-roofed villages nestling amongst orchards of fruit, and "wherever the

cliffs are less absolutely perpendicular, there are minute platforms partially sustaining houses with their backs burrowing into the rock, and their fronts extended on beams fixed in the cliff, accessible only by bolts driven into the rock; and above and around these dwellings patches of careful cultivation, to which the cultivators lower themselves with ropes." [1]

The river makes its exit from the gorge as a foaming torrent that makes all steamer traffic very difficult. Though motor-boats may now get through, small junks make the passage only with the greatest difficulty and risk. On the return journey, when they have to be hauled through the torrent, as many as two hundred men are harnessed to a single boat, and some of these have either to clamber round the towering, vertical cliffs or drop into the water and swim against the stream.

Below the mouth of the gorge, at *I-chang*, the river enters the productive Lake Basin, where cotton and rice are cultivated in the lowlands and tea is an important crop on the hill-sides. It has, usually, a plain on the left bank and a broken surface on the right, and is connected with a number of lakes that act as reservoirs and tend to prevent flooding. At the same time the annual rise of the river at Hankow is from 40 to 50 feet, and dykes are necessary. In some parts there are hundreds of miles of huge embankments, 40 feet high and 100 yards wide at the base. Their construction is undertaken by the inhabitants of all the districts where floods are likely to happen; there is co-operation for the protection of common interests.

In some places the land falls in level from the river to the hills, so that if there be any break in the embankment, the back lands are more deeply flooded than those next the river. In such districts the main roads are built along the sides of the hills well above the level of the lowlands.

How necessary these protective works are may be seen from the results of their failure. In 1931 the river

[1] Mrs. Bishop, *The Yangtze and Beyond.*

rose higher than usual, and produced the worst floods known in human history. A great deal of the region containing the vast and populous cities of Hankow, Hanyang and Wuchang was turned into an enormous lake. In the province of Hupeh alone a lake was formed one-third the size of Victoria or two-thirds of North Island, New Zealand, and 4 million homes were destroyed, 23 million people were rendered homeless and 8,000 were drowned in the Hankow urban district in the course of a single week. The total loss of life by drowning was at least 130,000.

Si-kiang Basin.—The third lowland area occupied by a dense population is the valley of the Si-kiang, separated from that of the Yangtze-kiang by mountain ranges, parallel to the coast, that occupy South China. The Si-kiang rises in the mountainous district of Yunnan, where there is a climate cool enough for white settlement, and stores of copper, silver, lead, iron, tin and other minerals that are likely to be of great value in the future. Already tin from Yunnan forms one-twentieth of the world's output.

The rest of the basin of the Si-kiang is occupied by the provinces of Kwang-si ("West Kwang") and Kwang-tung ("East Kwang"). Kwang-tung consists chiefly of the delta of the river and a mountainous region.

The low-lying parts of the basin are densely populated. Rice, cotton, sugar and tea are all cultivated; the variation in height, in fact, makes it possible to grow almost anything from rye to bananas.

Towns and Cities.—The people who inhabit these lowlands are practically all farmers, who depend entirely on the soil for their living, and are found in greatest numbers where the soil is most fertile and the conditions most favourable to agriculture. They live, as a rule, not in separated farmhouses, but in small villages or towns. The inland settlements are, therefore, Chinese in origin, and centres of prosperous rural areas. Some of them have slowly grown to be important market towns, where people who have things to sell meet those

who wish to buy. These towns have grown where it is convenient for people to meet and, as we should expect, the most important of them are situated on the rivers, the great highways of China. Each large river valley forms a natural unit, and at some convenient place, usually near the centre, there is a market city.

Hankow.—The largest of these market cities, *Hankow*, is also the most central. It is at the junction of the Han and the Yangtze-kiang, and so has "wet-ways," as Chinese call the rivers, to the south-east, south-west and north-west. At this point, too, the chief river route from west to east is crossed by the chief railway route from north to south. Ocean steamers can reach the port (the river is here a mile and a half wide), and by means of canals and other rivers goods can be collected and distributed over a wide area. The surrounding plains produce cotton and silk, and tea, the chief export from Hankow, is grown on the hills. Coal and iron are at hand, and various iron and steel industries, under the direction of Europeans, are increasing in value. Adjoining Hankow, and forming with it a triple town, are *Hanyang*, where are made steel rails for the railways, and *Wuchang*, from which are exported tobacco, opium, rice and hides.

Canton.—The ports of China, unlike the inland cities, are the creation of foreign traders who approached the country from without. We have already referred to the Arab origin of *Canton* as a port.

At a later date Portuguese and other seafaring nations reached the same entrance to the rich lowland, and Canton became the centre of a great trade. It was for a long time the chief seat of foreign trade in China, and even at the present time the Cantonese are, of all the Chinese, the shrewdest business men and the greatest travellers. Canton has a splendid situation for a great commercial centre. Its hinterland has rice, sugar-cane, silk, bamboo, wheat, barley, beans and maize to sell, and rivers, with valleys leading towards easy passes through the hills, for transport.

Canton is at the meeting of the West River,[1] East River and North River. Of these the Si-kiang, or West River, navigable by ocean steamers to within 12 miles

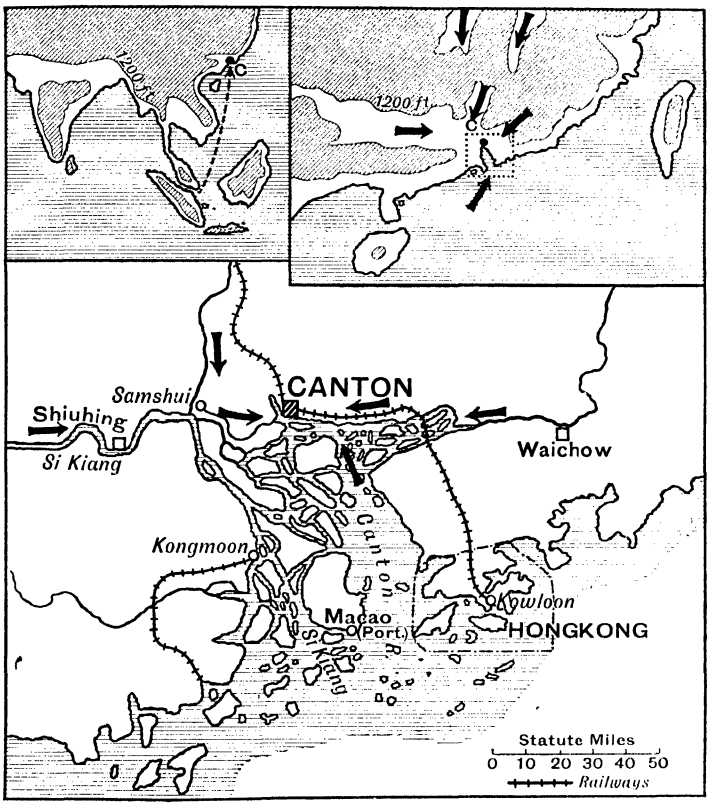

FIG. 19.—THE POSITION OF CANTON.

of the city, is the most important. Railways are being built, and have already been made to connect Canton

[1] As befits a people who early knew of the mariner's compass, the Chinese show the direction sense clearly. It may be noticed how often the four cardinal points occur in place-names: Pe or Pei, north; Nan, south; Tung, east; Si, west. Note also the following: Shan, mountains; Kiang or Ho, river; Hu, lake; Hai, sea; King, capital.

with other ports and with inland markets ; it is not surprising that this, the first, and for a long time the only, Treaty Port where a foreigner was allowed to trade, is one of the largest cities in China (population, 861,000).

Canton is really three towns : (1) a native town on land, surrounded by a high wall for defence. The streets are narrow, roofed over with matting, and therefore unpleasantly stuffy in summer, but all the warmer in winter, when it is cold enough to make the Cantonese wear two or three coats at a time. The streets are too narrow for cabs or carts, and their place is taken by wheelbarrows and Sedan chairs. (2) A native town on the water where a quarter of a million people live in boats. The river provides a highway for travel and fish for food, and its use as a residential quarter sets free more land for farming. In this water-city chickens and even pigs are reared in cages slung over the sides of the boats, and, in addition to floating houses, there are floating markets, floating theatres, floating jails and floating policemen. (3) A foreign town, with broad clean streets and fine houses, which was built by white men for their own occupation.

In 1933 the first of a series of bridges across the Pearl River was opened. It connects the busiest part of the city with the island suburb of Honam. It is proposed to build also a railway bridge, and the Chinese boast that one of these days there will be a through railway service from Calais to Canton.

Increase in the volume of trade and in the size of ships demanded better harbours for shelter, strong places for defence and means of storing coal. These were obtainable near to the mouth of the Si-kiang, where the rocky island of *Hong Kong* with Kowloon on the mainland, enclosed a magnificent harbour. In 1841 the island was occupied by a few fishermen and pirates, and the climate was unhealthy. To-day, as the result of British occupation, the pirates have been cleared out, the climate has been made healthy by the planting of trees and the laying of drains, and a capital, Victoria, a city

of fine buildings and houses, has been erected. Because Hong Kong is at the very gate of Southern China, ships come to it in such numbers to load and unload that it has the greatest trade of any port in the country.

Shanghai.—The next real entry to China is by the valley of the Yangtze-kiang, but this, with its rich supplies of cotton, wheat, silk, tea, rice, sugar-cane and coal, and an enormous population, was not opened for trade till

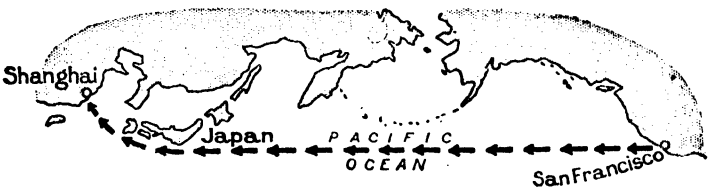

FIG. 20.—SHANGHAI: THE CHINESE PORT NEAREST TO THE UNITED STATES.

1843. As the estuary was low and marshy, the port for the valley had to be placed, not on the river itself, but at the first spot south of the marshes, where a town could be built. This spot, the site of *Shanghai*, is on the Wusung, a tributary of the Yangtze-kiang, and over 50 miles from the sea. Shanghai is not as good a port as one would like, because its harbour, which is gradually being filled with silt, is not deep enough for big ocean vessels. At the same time it has certain advantages: it is near the entrance to the rich valley of a great river, in a fertile plain, on level ground through which it was easy to build canals and railways, at the junction of natural routes by road, river and sea, and is the nearest Chinese port to the United States. Cotton is grown in the neighbourhood and labour is cheap; hence there is a flourishing local cotton industry. Of all the Treaty Ports, Shanghai, with its large international settlements, is the busiest.

In the third valley, that of the Hwang-ho, there are no towns on the banks of the river, on account of the floods, and no port at the mouth, for the mouth has moved from time to time, and towns never have time to

grow. Moreover, the rapid current and numerous sand-banks render navigation very difficult.

In the great plain of North China, however, the *Imperial* or *Grand Canal*, the most famous canal in the world, was constructed. It took six hundred years to build, and was finished as long ago as 1350. It joined the Pei Ho in the north, with the Hwang-ho and Yangtze-kiang, and continued to the sea at Hangchow. It was about 800 miles in length, the total length of the whole waterway being over 2,000 miles. In the days of its glory the canal had a wide, deep channel, and was used by the largest vessels of the time. To-day parts of it are blocked with mud, while others are out of repair and useless.

Where the Grand Canal joined the Pei Ho is *Tientsin*. Its position, on the Pei Ho and on the Grand Canal, and its connections by railway with north, south and west, make it the most important town in the north of China.

Capitals.—China is so vast that even the provinces have populations greater than that of the whole of Australia. Most of them are based on river valleys, and the great market towns, like Hankow, are also provincial capitals. Thus *Chengtu* is the centre of government as well as the centre of trade in Sze-chwan, and *Changsha* is the market and capital of Hunan, the province that occupies the southern half of the great lowland of the middle valley of the Yangtze-kiang.

The capital of the country as a whole has been moved, more than once, because the different peoples who, at different times, have ruled the country have not always governed it from the same centre.

The oldest of these capitals is *Sian*, in the valley of the Wei Ho. It remained a capital long after the Chinese had passed through this valley to occupy the northern plain, and, to it, in times of trouble, Chinese rulers have returned again and again.

One conquering race, the Manchus, from Manchuria, entered China from the north-east and made their capital at Peking; *Peking*, or *Peiping* as it is now called, consists of two square-walled towns: (1) the northern, or Manchu city,

which encloses the Purple Forbidden City with the palaces of the former emperors; and (2) the Chinese, or outer city. The two lie side by side, each entirely surrounded by a

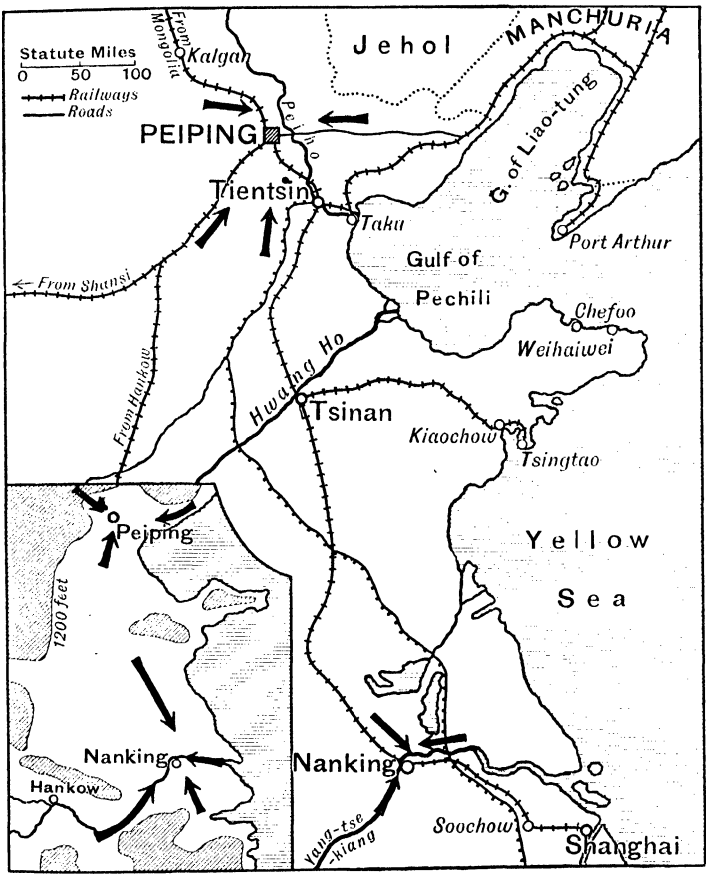

FIG. 21.—PEIPING AND NANKING.

great defensive wall; the total distance around them is about 20 miles. Peiping is on a sandy plain and suffers from dust-laden winds in the winter, but it has the commercial advantage of being within reach of supplies of

good coal and the military advantage of commanding the passes into Mongolia and Manchuria.

From Peiping run roads, some of which are now followed by railways, north-east between steep cliffs and the coast of the Gulf of Liautung, into Manchuria, south-west to Shansi, south to Hankow and north-west to Mongolia; and the city remained the capital of China right down to our own times.

The real "Chinese" capital is, however, *Nanking*, at the entrance to the last gorge on the Yangtze-kiang, with ancient roads up and down the river, and north and south across the plain; in modern times the new steel road of rails has connected it with Peiping and Shanghai. At this point the river is 4 miles (in flood 20 miles) wide, and the surrounding country was so fertile that it could, in certain parts, support 800 people to the square mile. Such a natural junction of routes and such rich and crowded surroundings made Nanking, at one time, the largest city in the world. It has walls 20 miles in length, though much that they enclose is in ruins owing to the destruction worked by Chinese rebels. But here is the capital of modern China.

CHAPTER IV

THE PEOPLE OF CHINA

As China has so many large rivers used for navigation and has such a lengthy coastline, the people of China might have been expected to bring forth a race of sailors and ocean traders, but where fertile land is abundant men do not usually take to the sea at an early period in their history. Scarcity of food, or lack of opportunity to make a living in other ways, may drive men out across the waters, but in China, in the beginning, there was plenty of fertile land and room for everybody; hence the people were widely spread over those parts where, by farming, they could, on small-holdings, provide their own food, clothing and fuel.

Chinese Farmers.—Conditions have in some ways long since changed. To-day the country is densely crowded, and many people live in towns, most of which are quite young, unless they are ancient centres of government. Just how many people there are in China nobody knows, but it is supposed that there are about 400 million or a little less than one-quarter the total population of the world. "From this total it is easy to calculate that if the Chinese people were to march past a given point in single file, the procession would never end; long before the last of the 400 millions had passed by, a new generation would have sprung up to continue the endless line." [1] And of all the people in this eternal march the majority would be farmers,

[1] H. A. Giles, *The Civilisation of China.*

peasants and farm labourers. The ancient civilisation of China is based on agriculture.

No Waste.—Now China, big as it is, if it is to feed this huge population, cannot afford to waste any of its farm land. The farms on the whole are small, often less than one acre, but they are skilfully and diligently cultivated, and quite a small patch of ground is made to produce enough food to support a large family, a water buffalo, a pig and some poultry. The United States of America is one of the greatest wheat-producing countries in the world, but China has just as many acres under rice, and on these is grown, in a single year, three times as much grain as in the United States, in addition to at least one other crop.

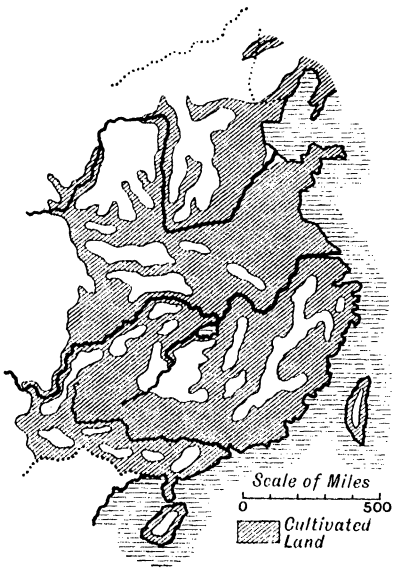

FIG. 22.—CHINA: CULTIVATED LAND.

Only the most skilful farming, the most untiring labour and the strictest economy could allow so many people to exist, and at the same time produce an enormous surplus of food for export. The system of farming, which is often more like market gardening, depends partly on the control of the water supplies. In the north the summer rains and the winter snows provide sufficient moisture, but in the south, where rice is the chief crop, some form of irrigation is absolutely necessary.

The methods of irrigating the land vary very much. Streams are carried by aqueducts and their waters distributed in tiny channels; water is led from rivers by broad canals to fill ditches that surround the fields;

wheels, turned by coolies working a handmill or a kind of treadmill, raise water from the streams to the fields at a higher level; coolies, standing on the banks of a river, bail water in buckets swung on a rope. There are large irrigation works with numerous sluices, floodgates, dams and embankments built at great expense out of taxes the people have levied on themselves. Without their consent it is almost impossible to levy new taxes or increase old ones, and their willingness to pay the heavy cost of the irrigation works is a proof that they understand that shortage of water would mean shortage of food and therefore famine and death. Indeed, water in all sorts of ways is used to a greater extent in China than in any other part of the world.

Intensive Farming.—To support the huge population the fields must, like market gardens, always be kept under cultivation, two or three different kinds of crops being grown on the same field during the same season. Under such an intensive system of farming, even the extremely fertile silt in the river flats would soon become exhausted, if fresh plant food were not often supplied. In countries where animals are reared, animal manure is available, but in China there is practically no pasture land. Land is too valuable to be wasted in producing meat when much more food can be obtained from the same area by putting it under the plough or the spade. Chemical fertilisers, too, are almost unknown.

To solve his difficulty the peasant stores for manure what cannot be used for food or fuel. Into a pit dug in a corner of a field, he puts all the waste green stuff that can possibly be returned to the soil; he laboriously dredges the irrigation canals for the fertile silt that collects on the floor; he stands in these canals up to his armpits in water, cutting down or gathering waterweeds; he climbs the steep infertile hill-sides for grasses and other plants; he may grow a crop of clover to use it simply as a fertiliser; sewage from large towns is carried by boats for miles along the canal for sale to the farmers. All the waste products on a farm are put in a pit and

left until fermentation has turned them into a valuable fertiliser. This is never scattered broadcast over a whole field, but is carefully worked into the mulched soil around each plant so that none is wasted.

The Chinese farmer, by carefully thought-out methods, gets more from the soil than any other farmer in the world. For instance, in Northern China, two important crops, wheat and cotton, are raised on the same field in the same year, though the growing season is too short to allow them to be cultivated one after the other. The wheat is sown in the autumn; by the following April the plant is fully grown, and the ears are beginning to ripen. The farmer, walking carefully between the rows of standing wheat, hoes the soil, dresses it with fertilisers, and scatters cotton seed which will germinate in the next fortnight. By that time wheat is ready for harvesting; it is pulled up by the roots and taken home to be threshed. Most of the straw and some of the roots are kept for fuel, and the rest, tied up in bundles, is taken to market in a wheelbarrow, while the chaff is saved for the manure pit. While this is being done by the women, the farmer thins out the growing cotton plants, treats them with liquid manure, and breaks up the moistened ground. By making crops overlap in this way, there is much saving in both time and space: every minute of the growing season is made use of, and the cotton crop can be picked early enough to escape being nipped by the late autumn frosts.

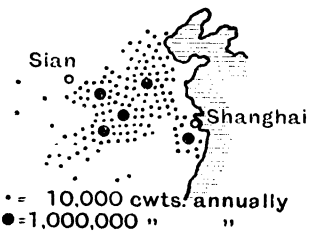

FIG. 23.—CHINA: COTTON.

Millet is another important crop in Northern China, for it can survive long periods of drought, and so can be grown where water is not readily available for irrigation. It thrives in hot climates and grows strongly during the period of summer rains.

Rice.—In Southern and Central China, the chief food is rice, which grows with its feet in the water and its head in the sun. Over the Lake Basin and in the great plains of the deltas, small, low-lying, level paddy fields with raised banks of mud to keep in the water are the commonest feature of the landscape. In most of the fields, however, as in North China, two crops a year are grown, but in Southern China the growing season is longer and the second crop, frequently wheat or beans, is harvested before the rice is planted.

FIG. 24.—CHINA: RICE.

While this other crop is growing, a small nursery field is being prepared for the rice plant. The soil is carefully tilled, highly fertilised and scattered with seed until nearly covered, after which it is flooded and kept soaked till the young plants are ready for transplanting. Meanwhile, the wheat crop in the larger fields is harvested, the ground is flooded, and

with the aid usually of a water buffalo, ploughed into a thick slime. When the proper time arrives, women squatting on low bamboo stools pull up the young plants, now about a foot high, in the nursery, wash the soil from the roots, and tie them in bundles.

Transplanting is a very tiring occupation ; from dusk to dawn, in sodden fields, the toilers with bodies bowed and mud up to their calves patiently set out the fragile plants in rows, one after the other. When the field has been planted it must be hoed and flooded till the rice is fully grown ; the water is then drained off, and the ground allowed to harden in time for the harvest.

So far as the rice plant is concerned, transplanting is unnecessary, but to the Chinese it means that another crop can be raised while the nursery plants are growing, and that less manure is needed on the larger field : the Chinese farmer saves everything except his own labour. Whenever an extra hour or two of hard work will increase, by the smallest amount, the yield of his fields, he will patiently and cheerfully do that extra bit, no matter how scorching the sun or how drenching the rain.

Tea.—While rice, in Central and Southern China, is the chief crop of the plains, tea is the chief crop of the hills. Rice needs rich soil and abundance of water ; tea will not thrive if stagnant water is allowed to remain round the roots. The tea plant is a bushy shrub, which, if left unattended, would reach the height of a small tree. It is, therefore, pruned to keep it broad, flat and low in height, in order that the leaves may easily be plucked. Only the buds and smaller leaves are used, and these are picked, one at a time, chiefly by the nimble fingers of women and children. It takes several hours to collect enough leaves to make a pound of dried tea. In fact, the amount of labour needed for the cultivation and manufacture of tea is so great that the industry can be carried on only where labour is very cheap. If the workers on the tea plantations were paid wages as high as those received by white men, tea would be so dear that only the richest people could afford to drink it.

Reverence for Ancestors.—It is curious to note the effect which the religion of the people has had on farms and farming. The Chinese are mostly followers of Confucius, a great sage, who lived in Northern China about 500 B.C. He taught that people should love goodness, live peacefully and honour their forbears. Now the respect shown to parents and ancestors has become a kind of religious worship, and has tended in the past

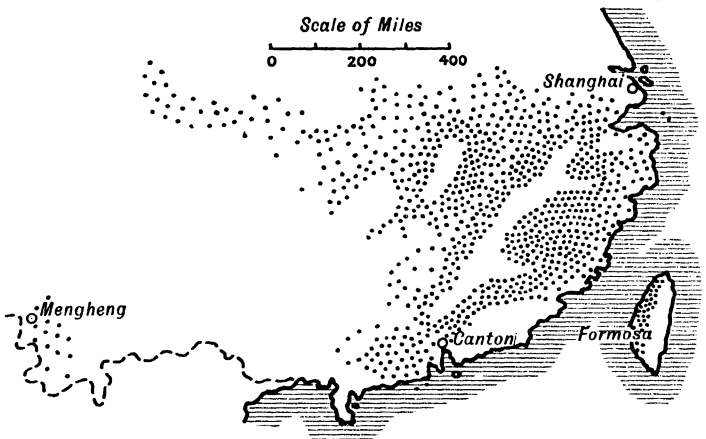

FIG. 25.—CHINA : TEA.

to make the Chinese prefer ancient customs, fashioned centuries ago, rather than to adopt new ways of living more suited to the present.

Then, too, the worship of ancestors has thrown much good agricultural land out of cultivation. When a farmer dies, he is buried under a mound in one of his own fields, and henceforth the spot where he lies must be left undisturbed for fear of raising his dire anger. As this practice has been going on for centuries upon centuries, a large amount of fertile land has, in densely populated rural areas, been rendered useless by these sacred hillocks. Grass, however, grows on the mounds, and the farmer, torn between fear of disturbing the ancestral grave and the fear of dying for lack of enough

ground upon which to grow his food, has solved the difficulty by tethering a goat to a peg and letting it graze on the grass. He can, of course, later on, make whatever use he pleases of the goat. But here again there is change. The old graves are now freely trampled on wherever the land is needed for road making or public buildings, and, especially in the cities along the coast and on the rivers and in those of the interior where there is any kind of contact with foreign people, great changes are rapidly taking place. Instead of always honouring what has been, looking back and never forward, and thinking of machinery as an insult to the past, many of the Chinese of to-day are adopting European or American clothing and demand electric light, water works, tramways, telephones, radios and cinemas. China has wireless services connecting Shanghai with America and France. Several hundred cinema theatres have been opened, while "talkies" and gramophone records have been made in Shanghai.

Life Not Easy.—It is clear that life in China is not the easy-going affair that it is in the South Sea Islands. There is no palm-fringed beach where men may bask in the sun and take no thought for the morrow. On the contrary, China is a land where much hard work is needed to obtain enough food to keep oneself alive. Moreover, the price paid for working in the swampy rice fields is rheumatism in old age, and the use of human sewage in the farms is productive of a number of diseases. Every inch of suitable soil must be cultivated ; every minute of the growing season must be used for raising crops, and every bit of waste must be put back into the land to fertilise it. Yet, in spite of all this striving and saving, the farmer can often, even in the most fruitful years, not produce enough food for himself and his family. If the rainfall is deficient, the crops fail for lack of moisture ; if it is excessive, the rivers are apt to burst their banks and drown the harvest. Scarcely a year passes that does not see some province in the grip of famine because the rain has failed to do what was expected of it.

Meat is rarely tasted by poor Chinese, as the land is too valuable to be given up to sheep and cattle. The commonest food animal is the pig, which lives on refuse, and can be reared in a small space. Puppy dogs are also bred for food, but they are a luxury which only the rich can afford. Fish is obtainable almost everywhere, and it is said that, on the inland and coastal waters, 40 million Chinese make a living by fishing. The staple food is rice, and though the home crop is enormous, much has to be imported from abroad.

Chinese are One People.—In this vast land there are, naturally enough, differences in living. There are social differences; not all the people are poverty-stricken peasantry; some are rich merchants. There are variations in modes of life and even of thought, and these are greatest between north and south. In the south we have seen rice is the principal article of diet; in the north wheat and millet are eaten; the bamboo, which in the south is not only a most important article of utility in the household but also a food, does not grow in the north at all; instead of the water buffalo the ox appears. There are canals in the north and narrow roads in the south.

Moreover, there is not, strictly speaking, one Chinese language; there are several; a Chinese from the north of China and one from the south cannot understand each other's speech.

But the Chinese, despite the differences between them, are one people; like most other ancient nations, they are not all of the same stock, but these stocks have fused together to such an extent that the Chinese are essentially one.

Though there is a difficulty in understanding speech, there is one universal written language, and this has been a very strong bond; further, all the languages spoken are Chinese; they are, in fact, dialects rather than languages, and to-day a new "National language" (Kuo Yu) is the recognised dialect all over China.

Besides this bond, another is found in the fact that

millions of farmers are all more or less interested in the same things and have the same kinds of ideals of life, while the influence of Confucius and Confucian scholars

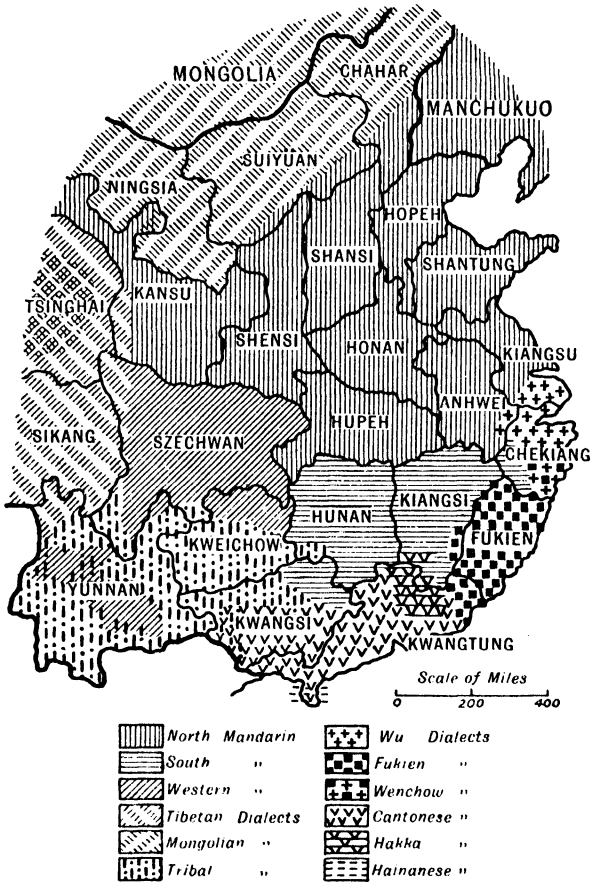

FIG. 26.—CHINA: LANGUAGES.

has provided the Chinese with a code of conduct and an outlook universal throughout the land.

One other point. We know that China has often been entered, from the land, by peoples from Central

Asia, and from the sea, in more recent years, by several European nations. But though this great country has never been able effectively to resist attack, it has never been broken up. The reason for this is that the basis of Chinese civilisation is the family. The Chinese originally came from a steppe land, where the family is the unit, and where families rarely unite except for war or for the purpose of some large trading enterprise. As they spread over the area they now occupy, the family tie was somewhat loosened, and the State, especially in such matters as large-scale irrigation and transport, became more important, but the villages continued to look after their own local affairs. As a matter of fact, the people continued to think very little about the State and a very great deal about the family and the village. Thus the social fabric is stable, even if the Government be unstable.

Coal.—During the centuries the Chinese developed a form of civilisation that was well enough suited to the land in which they lived, but some of the more up-to-date Chinese, as we have pointed out, have now come to the conclusion that if their country is to make any advance, new methods must be adopted. They understand that they must, in some ways, turn their backs on the past, introduce machinery, erect modern factories, construct more railways, and make better use of their coal, and we have given some

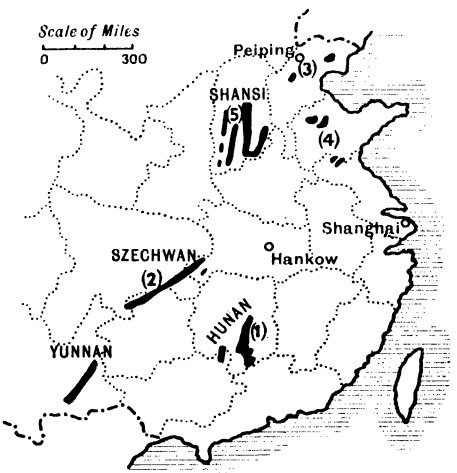

FIG. 27.—CHINA: COAL.

idea of the alarming rapidity with which all this is taking place.

There is an abundance of coal, widely spread but little worked. The chief coal areas are as follows :

(1) In the south of Hunan are extensive, easily worked deposits of anthracite. Coal is exported via the valley of the Siang to the Yangtze and thence to Hankow and Shanghai, for the use of railways and steamers.

(2) In the province of Sze-chwan there is coal, but of inferior quality. In places it crops out by the roadside, and children hack off pieces for their mothers to use in cooking.

(3) In the province of Chihli, in the hills east of Peiping, there are deposits of great extent. They are partly mined by European methods, and profit by their nearness to a railway and navigable river.

(4) The province of Shantung has coal in the west of the peninsula.

(5) In the north-west are the most important deposits of all. The largest coal-field in the world, as big as the whole area of Tasmania, lies underneath the loess in the basin of the Hwang-ho in the south-east of the province of Shansi. Much of the coal is anthracite of excellent quality, but, owing to the mountainous character of the province and the small number of roads or railways, there is very little mining as yet.

When these vast reserves of coal are mined on a large scale, China will be one of the greatest coal-producing countries in the world. At present, though the output is comparatively small, it is more than enough to supply local needs, and some is exported.

In addition to coal there are large deposits of other minerals. Exceptionally rich iron-ore occurs in large quantities round Hankow ; petroleum wells are being sunk with encouraging results in the upper basin of the Yangtze-kiang ; Yunnan is one of the richest copper and tin areas in the world, and Hunan produces more than half the world's output of antimony.

With all these possible sources of wealth, it is highly probable that China will become a great manufacturing country. Already there are a number of cotton mills, fitted with modern machinery, and the Chinese now make all the coarse cotton needed for their own use, while the export of this class of goods is rapidly increasing; fittings for " foreign " buildings, electric bulbs, electric irons and other electrical necessities are being made in some places, and there are extensive smelting works, especially round Hankow.

Transport.—With the change from a nation of farmers to one containing a large number of factory workers, changes in methods of transport have become necessary. Until quite recently means of communication were few and very bad. For long journeys inland, use was made of the navigable rivers—the Yangtze-kiang and its tributaries being the chief of these—and of innumerable canals; but carrying cargoes in junks that were propelled by wind was a very slow business, and steam-driven cargo vessels were not very common. Except in and around the big towns, roads were usually mere earthen tracks, without any kind of hard surface, and even these were few in number, land being too valuable to be set aside for people to walk on.

For passengers on land, the chief means of conveyance in the rural areas was a kind of sedan chair, carried on poles by two or more bearers; in the towns the rickshaw was more popular. Everywhere, for carrying both passengers and goods, the wheelbarrow was in common use. It is said that at one time a third of the population was employed in carrying goods on land or by boats on rivers and canals.

Slowly, very slowly, if the whole vast country is considered, better roads and vehicles are coming into use, but in certain areas much progress has been made. In the dozen years following on 1920, some 30,000 miles of road were made. In the provinces there are now many thousands of miles good enough for motors and omnibuses, and great numbers of motor-boats, employed

on the water, are driving the old-fashioned junk out of business. There are aeroplane passenger services between Shanghai and Hankow; mails are carried by aeroplane from Shanghai to Peiping. Here and there one may find a railway.

Railways.—Already there is a railway from Peiping to Hankow, and one from Canton northwards; these are being connected and will increase still more the value

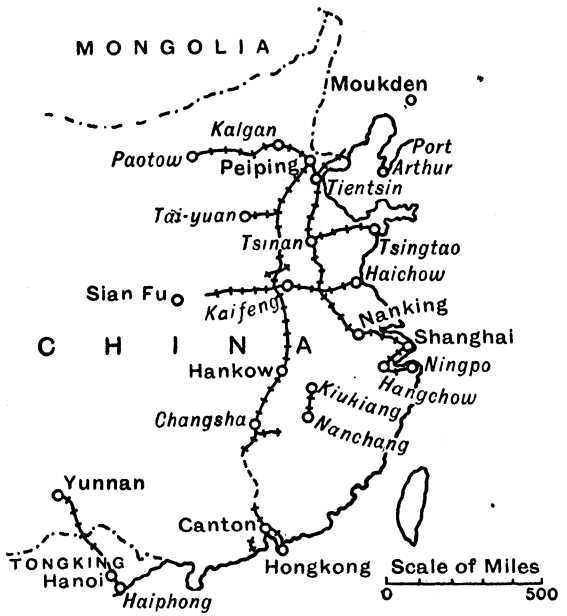

FIG. 28.—CHINA: RAILWAYS.

of the site of Hankow. This line from Peiping to Canton will be the main line of China, but many others will be built across the plains and along the valleys.

With regard to China's connections with the outside world, it may first be noted that these have practically all arisen in the pursuit of trade by nations overseas. Since the Treaty Ports were established, foreign trade has grown enormously. Sea-ways lead across the Yellow

Sea to Japan, across the Pacific Ocean to the United States of America and Canada, and through the Singapore gateway and the Suez Canal to Europe and Britain. Though the bulk of the foreign trade is carried on through the ports, a considerable amount of produce goes westward by land, by means of the trans-Siberian railway or by camel caravan through the Zungarian Gate to Turkestan and Russia.

Changes.—Coal-mining, factories, railways and steam-ships are new, and to the older people often unwelcome, changes in Chinese life, but they affect only material things. Ideas about life, past, present and future, social habits and customs and precious things like art do not, fortunately, give way so easily to the impact of the West. At the same time, the old Chinese civilisation does not work very well in this modern noisy world, and, in the attempt to make it fit new conditions, there has been a serious set-back. The Chinese are still, individually, clever and industrious ; the family is still the centre of Chinese life ; the district and the province are still fairly stable, and China, the land of the Chinese, is a definite unit. But the old form of government by Emperors, who thought themselves divine and often acted most undivinely, was too much a thing of the past, too much out of keeping with modern ideas, and it had to go. It has not, however, been easy to find something to put in its place and, at present, there is great difficulty in establishing a form of government for the whole of the country which will be in agreement with an ancient civilisation and yet in sympathy with modern ideas.

The Chinese Problem.—The most disturbing fact about modern China is the number of people. We have only to think that here, in a big land it is true, but, after all, in what is only a small part of the earth, lives almost one-fourth of the total population of the world ; if also we bear in mind that these people are living, feeding and clothing themselves on about two acres per person, it must be clear that not only is there a tremendous over-

crowding, but that there is practically no room for any more. Yet Chinese families are large and the population is still increasing. There are now, say, 400 millions; in another century these may become 900 millions. What is to be done with the surplus?

In the past the population has every now and then been reduced by vast national calamities; civil war and rebellions have taken a considerable toll; millions of people have lost their lives in floods; in 1921, during a drought in North China, half a million people died of starvation; on many occasions plagues have stricken down countless numbers. We cannot, however, permit ourselves either to hope or pray for a recurrence of these drastic population reducers. Moreover, when a strong central government is established, civil wars will cease; medical science will prevent the spread and perhaps the origin of plagues; engineering will diminish or put an end to floods; improved methods of transport will lessen the evils of famine. Already the laws of health, which were unknown a few years ago, are being preached everywhere. The population will then tend to increase even more rapidly and make more demands upon a land that seems to be already giving its utmost.

The Chinese may lose wars and even territory, but they ultimately win by an increasing birthrate, an extraordinary capacity for hard work, mental agility, an astute commercial sense and perhaps most of all by a sense of humour.

As factory industries spread, some of the surplus will be employed, as it is in manufacturing countries, in Europe and Britain, in producing manufactured goods that can be exchanged for food in less densely populated agricultural countries. At the best, however, this way of escape from practical starvation can be open to a small fraction only. What of the rest? The answer to the problem is of considerable interest to the whole world and not least to those who dwell in the other countries upon the Pacific shores.

CHAPTER V

JAPAN—ANOTHER LAND OF OLD CIVILISATION

Of all the groups in the long chain of islands from Kamchatka to Australia and New Zealand, none is more important than the 3,000 islands which make up Japan, the home, like China, of a very old civilisation. Not all the islands are inhabited, and the following account refers mainly to those that are.

Relief.—Japan is a very mountainous country whose numerous ranges lie in two main directions (see fig. 31): in the north-east they run from north to south; in the south they run more east and west. There is, however, a tendency for the first system to recur and cut across the other system, and in the south-east, where intercrossing is most marked, rise the high and almost impassable Japanese Alps. From these ranges spurs run out seawards, and give rise to a series of splendid harbours, such as Tokyo Bay, on which stand both Yokohama and Tokyo. On the other hand, the nearness of the mountains to the coast causes the rivers to be short and rapid, and to bring loads of silt that are deposited in the harbours.

Inland Sea.—Between two distinct parallel ranges in the south lies the Inland Sea, a world of wonder that has no rival for beauty and loveliness anywhere in the world. It is a tangle of islands and islets, bays, gulfs and promontories; the hills are lined with terraces or buried in forests of stately trees. On projecting points, in nooks and corners, are wooden cottages, villages and quaint pagodas, just like the pictures on a willow-pattern

plate. If the day be calm, the surface of the water is as smooth and shiny as a mirror, and the curious junks or sailing vessels look more like painted ships upon a painted ocean than like anything belonging to the real, solid, workaday world.

Earthquakes.—While the rock mass of the interior of Japan rises steeply from the Pacific to a height of about 2 miles, the floor of that sea itself, on the east,

FIG. 29.—JAPAN: INLAND SEA.

sinks steeply to great depths. It has been suggested that this huge difference in level makes this part of the earth very unsteady and so causes earthquakes; it is also thought that some slight shakings are produced by great masses of fine sediment sliding down the slopes of the continental shelf. It is certain that the telegraph cables which lie on the steep submarine slope are found, when raised for repair, to be torn as if they had been dragged by such sliding sediments. Whatever the cause may be, there is no doubt about the fact that earthquake shocks are very common. Small ones happen almost every day, while, at times, severe ones bring destruction to large areas.

When an earthquake occurs under the sea, the whole body of the ocean is moved, after which the movement spreads outwards in circles, as on the land; because the water offers less resistance to the movement than does the land, the waves travel with great speed. When the waves reach the shore their speed decreases, but their

height increases, and their effects on a lowland coast are very disastrous. In 1896, an earthquake in the North Pacific laid waste 175 miles of the northern coast of Japan, altered the shape of the shore-line, destroyed villages, ruined thousands of acres of arable land, carried away thousands of fishing-boats, killed 27,000 people and rendered 60,000 homeless. In 1923, another earthquake caused enormous damage; nearly a quarter

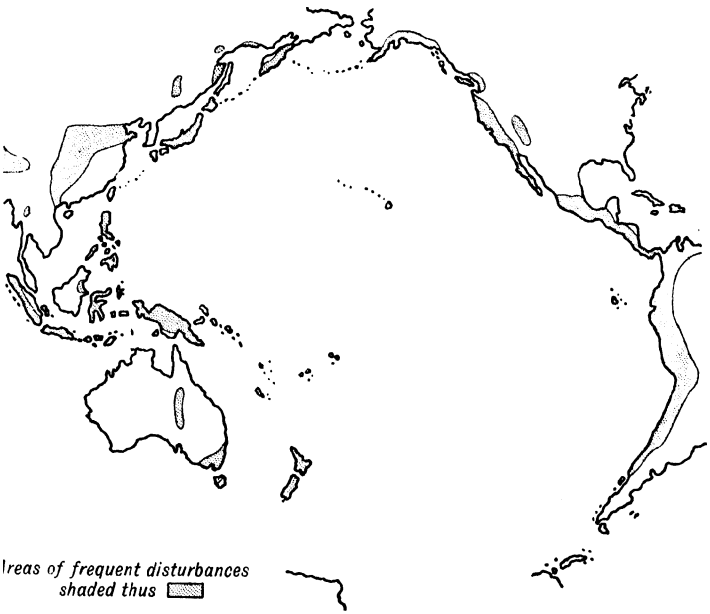

FIG. 30.—EARTHQUAKES ROUND THE PACIFIC.

of a million people lost their lives. Yokohama was almost entirely wiped out, and in Tokyo property was destroyed to the extent of over £150,000,000.

Volcanoes.—The Japanese mountains, as we have already mentioned, are part of a series of great upfolds in the earth's surface which border the Pacific. They therefore lie along a line of weakness, of the same kind as those in the East Indies. As it is natural that

volcanoes should occur where there are fold mountains near the sea, Japan has its full share of them. The highest and most beautiful is *Fujiyama* or Fuji. It is so high that the summit is snow-capped nearly all the year round, and so beautiful that when seen from the sea, at the time of dawn, when the distant blue of the mountains melts into the deep blue of the sky and the white summit seems to hang in the heavens all by itself, it looks more like a dream mountain than a real one.

As there appears to be some connection between earthquakes and volcanoes, it is usually to be expected that the two disastrous happenings of volcanic outbursts and earthquake shocks will be felt in the same region. We have just pointed out how terrible in Japan have been the results of some of the earthquakes; those of volcanic action are often equally terrible.

One outburst, in a few seconds, blew away an adjoining peak 3,000 feet in height, destroyed four villages and everybody in them, and covered an area of 27 square miles with dust, lava and other forms of rubbish. Another, after a series of earthquake shocks, opened four new craters on its eastern slope, from one of which poured a mingled torrent of mud and rocks that tore a passage, a mile long and nearly a quarter of a mile wide, through a forest of birches, beeches and pines. It crossed a valley, and in so doing, dammed up the waters of a river with a barrier, 60 feet high, of forest trees and fragments of rock, plastered together with mud, with the result that the halted stream formed a lake a mile and a half long.[1]

It is perhaps not impossible that the suddenness of such disasters has played some part in teaching the Japanese to meet danger and even death with that calmness and fearlessness that always mark their behaviour in times of peril. They face danger without shouting, death without fear and sorrow without weeping.

Climate.—The Japanese Empire stretches through so many degrees of latitude that it is cold enough in the

[1] *Geographical Journal*, vol. xlvi.

north to have fir trees like Canada and warm enough in the south to have bamboos like those of the East Indies ; the Japanese portion of the island of *Sakhalin* reaches the fiftieth parallel of latitude ; *Formosa*, in the south, lies on the Tropic of Cancer.

There is, everywhere, plenty of rain. In the winter, cold winds blow outwards from Asia, take up a little moisture from the Sea of Japan and, rising to cross the mountains, deposit a fair amount of moisture in the north and north-west. Owing to the extreme cold this often falls as snow, especially in *Hokkaido* or *Yezo*, which is snow-covered for five months in the year, while even in the north-west of *Honshu*, such a depth of snow falls as to cover houses completely. In the summer the winds come from over the sea and bring heavy rainfall, particularly in the south and east.

The climate of Japan is affected also by ocean currents. The trade winds set up a warm equatorial current which flows west in the neighbourhood of the equator, but divides into two branches off the East Indies. One of these branches, the Japan Current, or *Kuro Siwo* (the Black Stream) flows northwards and washes all the south and part of the west coast; then the water is caught by the west winds and driven eastwards towards America as the North Pacific Drift. Any winds that cross the Kuro Siwo carry warmth and moisture to the parts they reach, but their influence on the winter temperature of Japan is not so great as we might expect, for in winter the monsoon winds tend to blow from the north and north-west.

Vegetation.—The result of the arrangement of mountains, winds, temperature and rainfall on the vegetation of the islands is very striking, especially if we consider separately the north, south and centre of the group.

In Hokkaido (Yezo), where there are great extremes of temperature with heavy snowfall and frozen harbours in winter, the climate is too cold and wet for grain, but not for forests. As the region, however, consists largely of upland, the trees of the forests—oak, elm and birch—tend to be stunted.

In the centre, that is in the north and west of Honshu, the climate is again one of extremes. The cold winter winds bring rain and snow to the western moun-

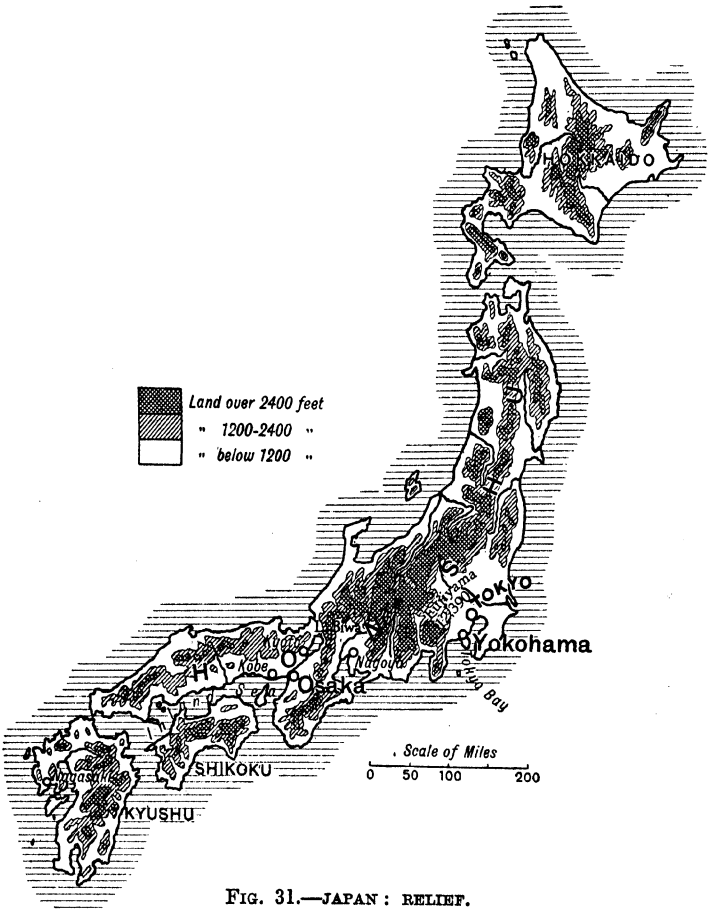

FIG. 31.—JAPAN: RELIEF.

tains; the warm summer winds bring heavy rains to the eastern slopes. Forests are again the chief form of vegetation, but the trees now include deodar, fir, especially on the heights, and bamboo, camphor and lacquer,

on the lower ground: from the last is obtained the lacquer used to beautify so many Japanese manufactured articles. The forests supply timber and the volcanoes provide sulphur for a prosperous match industry; another industry dependent on the forest is the manufacture of paper.

Farther south, that is in South-eastern Honshu, *Shikoku* and *Kyushu*, where the winters are cool and dry but the summers are hot and wet and the valley soils are fertile, there are many kinds of plants—cherry, almond and other flowering trees, rice in summer, wheat in winter, tea on the hill-sides, cotton on the plains and mulberry trees for the feeding of silk-worms.

Rice of an excellent quality is grown, both for home use and export, but the plant requires more regular supplies of moisture than the rainfall gives in the plains, and water is brought by canals from the rivers to supply the defect. As rice is rather expensive, the chief food of the poor is the sweet potato; this does not enter into trade and so is often overlooked. Rice, besides being a food, provides raw material for the manufacture of paper and, when fermented, the national beverage, *saké*.

As more and more of the population goes to work in modern factories, wheat tends to displace rice as a food, but the home-grown crops of this cereal are small. The cotton crop, most of which is consumed in the country, is also small and of poor quality; extra supplies are obtained from India. There are several varieties of fruit, but the supplies are not good owing to the heavy rains that come in autumn when the fruit requires a dry climate and plenty of ripening sunshine. Other useful crops are barley, millet, all kinds of vegetables and tobacco. More important than any of these, however, are tea and the mulberry plant.

Tea, which can be grown better in the north-west, where the heavy snow protects the bushes from frost, than in the south, is widely distributed; much is exported to the United States, where Japanese tea is in high favour.

One of the most important exports of Japan is silk—eggs, cocoons, raw silk, silk waste, wild silk, spun silk, silk goods and made-up garments.

Population.—The above accounts of climate and vegetation help to explain the distribution of the people. Few are found in the north and north-west; most are in the south and south-east, where the climate is more agreeable and farming more possible, and the chief settlements are in the valleys or lowlands, where the soil is fertile.

Houses.—Houses, lightly built on account of the frequent earthquakes, are very simple. The roof, supported on four poles, is of rice-straw or tiles, and heavy enough not to be easily blown off by the strong winter gales; it slopes steeply in order to shed snow, and sticks out well beyond the walls to give shelter from the sun. The walls are of bamboo or of thick oiled paper; the latter are protected at night by wooden shutters; in the colder parts of the country, the walls may be plastered both inside and out. The rooms are divided by screens, often of paper, the removal of which converts the whole of the interior into one large chamber. By taking down also the screens that form the walls, the house is completely ventilated and privacy destroyed. Perhaps the open houses, where everything can be seen by the passer-by, may have had something to do with the politeness of the Japanese.

On the floor of plaited bamboo are thick mats of rice straw on which people sit or sleep. The size of a room is often given by the number of mats that would cover the floor; thus one room is a four-mat room, another an eight-mat room and so on. Thick padded quilts of silk are often laid on the mats for use at night. Small stools take the place of tables, while a metal stove, shaped like a flower-pot and filled with fine white ashes, does duty for a fireplace when warmth is wanted.

Houses such as these do little damage if brought to the ground by an earthquake and do not cost much to repair or rebuild, but they are easily destroyed by fire,

and valuable pictures or pottery are usually stored in a safe place. One or two only are brought home from time to time to be looked at and admired.

The chief occupations are fishing and farming, but as the fertile land is small in amount and the population is great, clever cultivation is necessary. The Japanese farmer is as skilful, as thrifty and as hard-working as his Chinese neighbour. By intensive labour, deep digging, constant weeding, abundant watering and planting of crops in rows to enable them to be often manured during growth, he has made his naturally infertile soil as productive as a garden.

There is very little pasture on the hills and mountains and, as in China, land that can be cultivated is too valuable to be used for growing grass; hence, there is no stock raising and few domestic animals. The absence of sheep means that wool, which must be imported, is dearer not only than cotton, but also than silk, both of which are produced at home. The absence of cattle means that there is no leather for shoes, and the carpenter is the bootmaker; that there is no butter and cheese; and that a Japanese, except for fish, is practically a vegetarian. The absence of horses, except in the far north, where there is a little grass and few people, is a reason for the rickshaw, light enough to be pulled by man. A few horses and cows may be used on the farms for ploughing and harrowing, but most of the work is done by hand with the mattock and the hoe as tools; at harvest time a basket on the back is a substitute for a wagon.

Routes.—A farming people, tied to the soil by the nature of its work, does not move very much, but some movement is necessary to send the produce to market or to the ports for export, and the easiest lines of movement are those upon which the big cities have been built. Of these easiest routes there are three:—

(1) On the sea, especially the island-dotted Inland Sea. The long coast, the many safe harbours and the

abundance of fish have drawn the Japanese to the water and produced a race of fine fishermen, from amongst whom are obtained the sailors required by the growing naval and mercantile services of the country.

(2) On the east, where the mountains run north and south. Here movement is easiest both along each coast and through the great length-wise valleys between the ranges.

(3) In the south. Here the mountains run east and west, but the southern ridge is divided into islands, and the chief route runs along the southern shores of the big island of Honshu.

The interior of the islands is occupied by mountains, where movement is difficult and in some places impossible.

Ports.—As we shall see presently, all the big ports for overseas trade are connected with the main land routes. There was a time, however, when the Japanese, like the Chinese, had no need of ports because they had no desire to trade ; they grew all their necessities and they were too poor to buy luxuries. They lived, too, on the eastern edge of the trading world, just as the British, before the discovery of America, lived on the western edge. Away to the east was a wide waste of ocean, beyond which was the thinly peopled western coast of North America. Changes have, however, taken place. Japan has become a manufacturing nation, and needs both to import raw materials and to export merchandise. Moreover, the western side of America is filling up and Japan, instead of being at "the end of the street," is now on an important trade route between Eastern Asia and Western America.

The ports that serve this route are in the south, where are the largest plains, the best land routes, the best climate, and naturally, therefore, the most people.

Right in the south-west, in a small ravine on either side of a stream, is *Nagasaki* with a fine deep land-locked harbour. This is not a natural situation for a port, which is usually as far inland as possible to take advan-

tage of the fact that water carriage is cheaper than land carriage. Its situation, at the point nearest both to Korea and Central China, makes it rather more of a ferry town than a port, but it has an additional importance from the coal-fields in the neighbourhood; these supply fuel for steamers trading between China and America, and for the works engaged in building iron ships.

In the populous south there are three plains of some size; one of these lies at the eastern end of the Inland Sea, and on it, at the head of the Gulf, at the mouth of a river, at the farthest point inland and at the meeting-place of many roads from all directions, is *Osaka*, the second largest city in Japan. Being situated on the great east and west routes along the south, it holds an important strategic position, and one of the most striking things in it is a great fortress built of stones 40 feet in length and 10 feet in height and surrounded by a moat paved with granite.

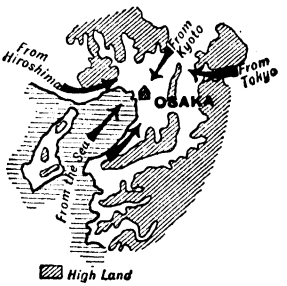

FIG. 32.—POSITION OF OSAKA.

The flatness of the land has made it easy to build canals, and Osaka is the "Venice of Japan." There are local supplies of cotton, a suitable humid climate, numerous streams to provide water power and, as everywhere in Japan, plenty of cheap labour; naturally cotton is manufactured, and Osaka is the "Manchester" of Japan.

Unfortunately, the river which drains Lake Biwa has deposited so much silt that the size of the harbour has been much reduced, and the port for the plain, not quite so far inland but on the same plain, is now *Kobe*. Kobe, like Osaka, has cotton and other factories, and in addition water deep enough for those modern ships that bring raw cotton from America and India and carry away rice, bamboos, and manufactures.

In another of the plains, the one farthest east, is *Nagoya*, also on the great east-west route and with many other routes converging on it. As the plain is specially suited for growing rice and the neighbourhood also contains raw materials to support manufactures of paper and matches and particularly porcelain, Nagoya is an important city.

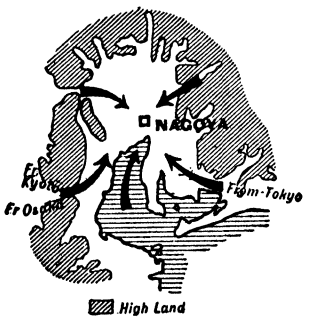

FIG. 33.—THE POSITION OF NAGOYA.

Capitals.—In some ways the most important city in any country is the capital, but the position of a capital cannot often be explained without taking into account history as well as geography, seeing that what men do affects the geography of a country.

The ancestors of the present Japanese came from the mainland of Asia between 1000 B.C. and 500 B.C. They landed naturally on the west, and advanced east, slowly pushing the aborigines before them till the latter had reached a point where they could defend themselves, when they made a long and determined stand. Behind them were the Japanese Alps, in front of them a narrow isthmus containing Lake Biwa. The defences and the aborigines were strong enough to force the Japanese to remain on the west side of the isthmus, and it was in the plain south of Lake Biwa, the plain on which Osaka now stands, that the first capital was afterwards established and that Japanese civilisation grew. The old capital, *Kyoto* (" capital eastern "), was as far east as Japanese power then held. It was surrounded by hills and itself built on thirty-six different peaks, in the centre of what is now the best tea district and one of the best silk districts. It is chiefly noteworthy to-day because it still possesses the old artistic industries in porcelain and bronze which were encouraged during the centuries when

Kyoto was the home of the Mikado, or Emperor, and it has remained less changed in appearance than most of the great Japanese cities.

For more than a thousand years, from 782 to 1868, Kyoto remained the capital, even though the Japanese had by this time occupied and ruled the whole of what is now called Japan and not merely the southern portion. In 1868, however, there was a revolution, and the capital was then moved to the third and largest plain, that in the south-east, where the north-south road meets the east-west road. The new capital had almost the same name as the old one—*To-kyo*, which means "eastern capital." In Japan, as in China, a capital has been moved ; such a thing in Europe, in modern times, is more difficult, because all the Government offices and officials would have also to be transported. In Japan and in China, however, the ruler was an autocrat and, in practice, when he wanted to go somewhere else it was not so very difficult for him, as it were, to take his capital with him.

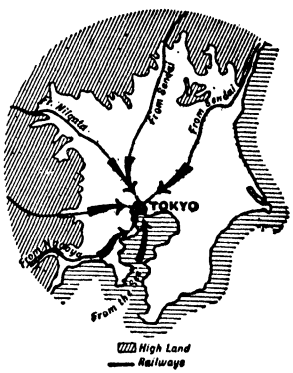

FIG. 34.—THE POSITION OF TOKYO.

Tokyo, unlike Kyoto, is completely changed. Big hotels, electric trams, business houses and shops give much of a European instead of a Japanese appearance, while a university and factories for the manufacture of silk, porcelain, enamel, machinery and toys give it a European instead of a Japanese atmosphere. The harbour, never a good one, has been silted up, and the place of Tokyo as a port has been taken by Yokohama, nearer the entrance to the Bay of Tokyo.

Yokohama, the best-known seaport of Japan, has steamship communication with San Francisco, Vancouver, Seattle, Shanghai and Hong Kong, and possesses

a magnificent harbour. But it is not a very striking place, being situated in a low swampy region, ditched over with canals. It is "a town of rapid weedy growth, choked up with closely built warehouses, some really fine and well-stored Western shops, a good hotel or two, acres on acres of bonded and free stores, custom-houses, banks, shipping-offices, poisoning grog shops, two well-built churches, tiny shops of Chinese money-changers, tasteful bungalows with pretty gardens, a spacious railway station, an anchorage wide enough for the fleets of all nations and above all Fuji."[1]

Clans.—We have seen that China is a land of families, divided in such a way that the idea of a nation or a state made little appeal to them; the family tie is stronger than the feeling of patriotism. Japan, on the other hand, is a land of clans, banded together in such a way that the tie of the clan was often stronger than that of the family. These clans, from early times, were engaged in a long slow warfare against the aborigines, and they learned to put a high value on soldierly virtues and to obey, loyally and cheerfully, their military leaders. In all this they resembled the clans of the Scottish Highlands, and nothing whatever in China. The clan is bigger than the family, not only in numbers, but also in many other ways, and the loyalty that it demands is something finer than mere family affection. It was this clan spirit that helped the Japanese to grow unitedly into that even bigger thing, a real nation, the attachment to which is patriotism. In another respect, the Japanese have had a great advantage over the Chinese; their country is smaller and therefore much more easily organised. So far as change is necessary, they have been more successful than the Chinese. They have managed, without giving up what was best in their old civilisation, to take their place in a modern world.

The Population Problem.—But like the Chinese, they have to face the same problem of what to do with their population, which increases at the rate

[1] H. Faulds, *Nine Years in Nippon.*

of about 1 million each year. The Chinese farmer, by a thrift that is almost a pain, manages to go on living on a very small holding. So does the Japanese. The average Japanese farm is about two and three-quarter acres in extent, and supports, on the average, a family of six. There is no room for any more people on these farms. There is undeveloped land in Hokkaido and Kyushu, and perhaps it is not possible to speak of Japan as having too many people until these are occupied. Yet, the cultivated area is the most crowded land in the world with 959 inhabitants to the square mile.

A great deal of the increase in population, in recent years, has been met by establishing factory industries, which with up-to-date equipment and cheap labour can undercut white workers. The factories called for workers and found them in the people not wanted on the farms. Large quantities of wool from Australia, iron-ore from China and cotton from India, are imported to feed the factories, which means, to feed the people also; Japan is now the largest exporter of cotton fabrics in the world, and the second largest not only of silk but of artificial silk. But all the best agricultural land remains too full; all the rice land is in use and rice actually has to be imported.

Another way of meeting the difficulty of having too many people is to send them to another land that has too few, as Britain has sent her sons and daughters to Canada, Australia and elsewhere. Up to now the Japanese have not emigrated in very large numbers. At one time they went to California and the Pacific States of America, but the number was never greater than 14,000 in a year, and that is not many out of a population growing at the rate of 1 million a year.

If Japan had any suitable empty colonies she might, in them, find homes for her numerous sons and daughters. It is true that, after the Great War of 1914–18, Japan was given, by the League of Nations, a mandate to govern certain of the former possessions of the Germans, the

Marianne Islands, the Carolines and the Marshall Islands. These islands, however, are too small to take many of Japan's surplus people, and, furthermore, they lie within the tropics and are no more suitable for occupation by Japanese than they are by Europeans. White peoples in Australia, British Columbia, the United States and elsewhere have raised barriers to the admission of Japanese into their countries. While the reasons for these may be quite sound, the actions that follow from them do not help the Japanese. It is certain that in a few years Japan will be so full that some of the people must go out or die. It is probable that they will not wish to die, yet where they are to find a refuge is, as in the case of the Chinese, one of the problems that interest all the people on the shores of the Pacific. There is Manchuria, of which we shall speak in the next chapter, an almost empty country close at hand, but though the Japanese have an intense interest in that land, they do not at present feel inclined to emigrate to it.

CHAPTER VI

THE MANCHURIAN PENINSULA

In Chapter III we have pointed out that there are, in the east of Asia, four large peninsulas. Two of these, Indo-China and China, have already been described. The third, the Manchurian peninsula which includes Korea and part of Eastern Siberia, has, in recent years, been very much in the public eye for reasons which will appear in our story.

Relief.—Here, except in the subsidiary peninsula of Korea, the mountains run north-east and south-west, with extensive lowlands between them. The greatest extent of highlands is in the east, the east coast being everywhere, except in one place, bordered by highlands. The greatest lowland is in the south-west, and forms the core of Manchuria. By far the greater part of the peninsula is the basin of one river, the *Amur*, whose upper waters unite before they break through the mountain edge of the great plateau to the west and flow first south-east across the grain of the country and then north-east to the sea of *Okhotsk*.

Climate.—The land is, of course, cold in winter, and the north is not very warm even in summer, while in winter (see fig. 37) it is one of the coldest parts of the world; there is ice at the mouth of the Amur for nearly two-thirds of the year. The south is much warmer, and in summer the temperature does not greatly differ from that of North China; it is obvious that it is the south which is the desirable portion, and especially the Manchurian lowland.

Korea.—The fortunes of this land have been affected by its position. Korea is, at its nearest, only 120 miles from the west coast of Honshu, the most important of the Japanese islands, and the Japanese have regarded Korea as a suitable home for their ever-increasing population

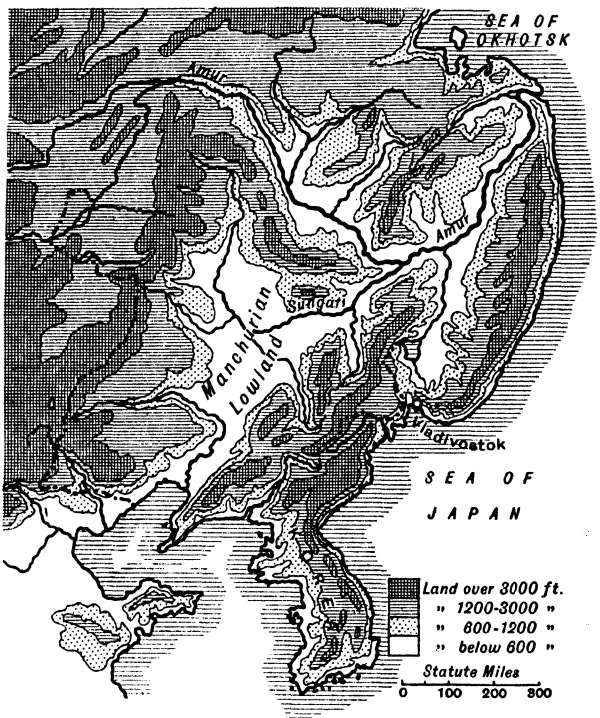

FIG. 35.—RELIEF OF MANCHURIAN PENINSULA.

and a source of supplies of food, raw materials and minerals of which they stood in need.

On the east side Korea has a broken coast-line that contains a number of good natural harbours suitable for ports, while on the west there are well-wooded valleys that end in plains near the sea. On these plains rice is grown everywhere, but chiefly in the south-west, and a

great deal of this is sent to Japan to feed the Japanese. Cotton is grown and exported to Japan for use in the cotton mills of Osaka. Moreover, Korea contains, especially in the north, mines of iron and gold that are of great importance to Japan, because the latter country is not very well provided with minerals. There are also valuable forests.

It is clear that it mattered a great deal to Japan who should rule and control Korea. China claimed this right, but did nothing to develop the country or to preserve order. The land was overrun with brigands, and neither life nor property was secure. The Japanese made up their minds to put an end to this state of things, and in 1894 war broke out between Japan and China. It ended in a victory for Japan in 1895. The Chinese then agreed that Korea should be an independent country, but the Japanese began to take a hand in its management and to spend money in various ways.

Siberia.—The northern half of the Manchurian peninsula is part of Eastern Siberia and belonged to Russia. For many centuries the whole of Siberia was inhabited only by trappers, herders of reindeer and the nomad shepherds of the steppes. Then the Russians crossed the Ural Mountains and began to spread out towards the east. In due time they reached the Pacific Ocean and built a port at *Vladivostok*, in the gap between the highlands to north and south and as far south as they could to secure that the harbour should be blocked by ice only for the shortest possible time. When they began to be afraid of the safety of their position in a place so far from home, they decided to construct a railway that would connect Russia with its Pacific outlet. This railway, the Trans-Siberian, was, therefore, built for military, not commercial, reasons, but it soon helped to open up certain parts of Siberia.

It was not an easy line to construct, for it had to cross wide rivers like the Ob, Irtish and Yenesei. East of the Yenesei, mountains blocked the way. Forty miles farther east was *Lake Baikal*, round whose southern

shore steep granite cliffs rose sheer above the water's edge, making the work of railway construction both difficult and expensive. Beyond the lake the line had to run far north in order to keep within Siberian territory. Later, by permission of the Chinese, a short cut to Vladivostok was made across Manchuria, but this is no longer part of the Siberian railway.

Unfortunately, the harbour of Vladivostok is frozen

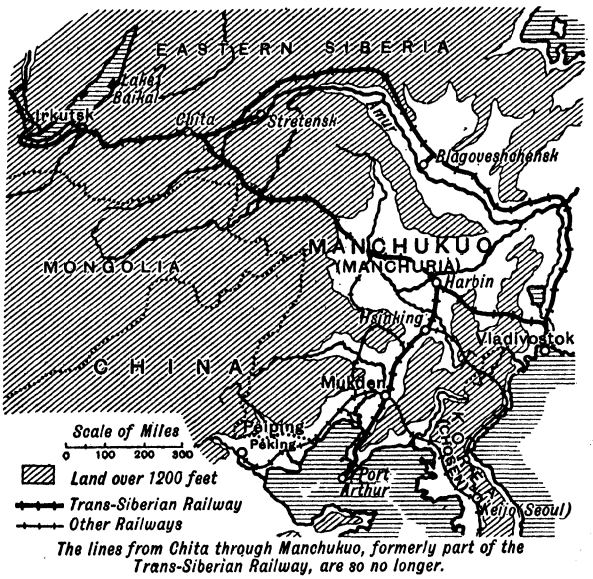

FIG. 36.—ROUTES OF TRANS-SIBERIAN RAILWAY, EAST OF LAKE BAIKAL.

for some months each year, and the seaway has then to be kept open by means of ice-breakers. Russia, however, was allowed by China to build a branch line south from *Harbin*, through *Mukden*, to *Port Arthur*, which is ice-free all the year round.

Russia was, for a long time, perhaps more interested in holding Eastern Siberia than in making it productive, though it had great natural wealth in timber and fish, and especially in the minerals coal and gold. Settlement

was slow. But by the construction of railways across Manchuria, Russia began to obtain control of that country also, and there was always the possibility that not only Manchuria, but Korea as well, would be annexed.

This alarmed the Japanese, who did not wish the Russian Navy so near to her western shores, and in 1904 and 1905 there was another war, this time between Japan and Russia, and again was Japan victorious. As a result the Russians had to give up their rights at Port Arthur and the southern half of the island of Sakhalin to Japan and lost all their influence in Manchuria. To make her position still more secure, Japan, in 1910, annexed Korea.

She at once began to make roads in Korea, to widen the streets of the capital *Seoul* (now *Keijo*), to deepen the harbours, embank rivers, build light-houses, and open schools to teach the people how to grow cotton and rear silk-worms in order to supply raw material for Japanese factories. But the Japanese themselves did not migrate in any large numbers to Korea. There are still very few Japanese in that country : the greater part of the population remains Korean.

Manchuria.—The possession of Korea (or *Cho-sen*, as they call it) did not satisfy the Japanese and, after the Great War, when their power and influence had been very much increased, they began to turn their eyes towards Manchuria.

We have seen that the important part of the peninsula consists of the Manchurian plain, broader in the north than the south and enclosed on the east and west by high forested hills. It has, like North China, hot and moderately rainy summers and short but very cold winters, during which the land is frost-bound. There is, however, a growing period of five months free from frost, and the soil is very fertile. Hence farming is easy and profitable. On the tall grasses of the plains round Harbin cattle and horses are reared ; the forests of the hills supply timber ; coal and iron are mined near Mukden ; gold is found in the sands of the *Sungari* River. Manchuria is naturally a rich land.

Chinese Immigration.—But, down to our own times, it has been a land of promise rather than of performance. The Manchus, who gave their name to it, did not, themselves, make much use of it, and at the beginning of this century it was the home chiefly of nomads and brigands. The Manchus were a fighting people, and in the seventeenth century they conquered China. Emperors of Manchu descent sat on the throne of China until that country became a Republic. But though the Manchus conquered China and ruled it, they did not give to the Chinese any civilisation of their own. Things happened quite the other way about. The Chinese carried their civilisation into Manchuria, where they entered and settled, at first slowly, but in recent years in very large numbers.

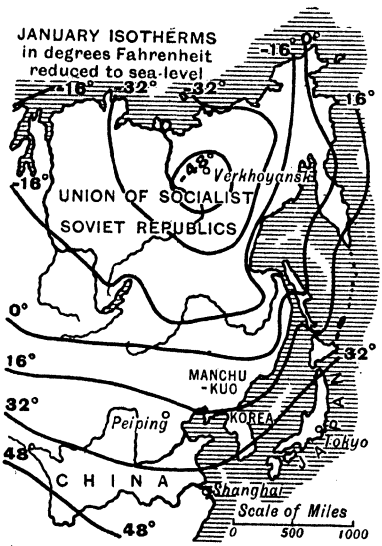

FIG. 37.—NORTH-EASTERN ASIA: JANUARY ISOTHERMS.

In 1927 and 1928 the number of Chinese entering Manchuria was nearly a million, in 1929 it was over a million. There was then no commoner sight on the roads of Southern Manchuria than a Chinese family with a strong cart laden with iron cooking pans, chickens, a few bags of grain and oddments of furniture, trekking north to find land on which to settle. Chinese now form about 98 per cent. of the population. When they settle they build houses of mud or of a mixture of clay and straw, turn up the soil with rude ploughs that are drawn by ponies and sow their seeds. The crops they grow are the same as

those they have been in the habit of growing in Northern China. The chief of these are millet, maize, wheat, barley and, above all, soya beans.

Soya Beans.—Soya beans are to Manchuria what wheat is to Canada, rice to Burma or coco-nuts to the islands of the Pacific. Whether rice or wheat or millet in any particular region of Eastern Asia takes first place as a food, the soya bean is always second. There are four hundred different varieties and there are almost as many uses. It is eaten cooked or, as bean powder, in cakes and sauces, or as bean milk. Bean milk is made by crushing the beans, adding water and then heating. Bean curd, a kind of cheese, is eaten at almost every meal. It is eaten raw or mashed into a paste, sweetened and put in pastry puffs ; it is cooked with vegetables and meat. Cattle as well as people are fed on soya beans, and the stalks are used as hay.

The bean provides oil which can be used as salad oil, frying oil, turned into butter, lard, margarine, lamp oil, soap, printing ink, a substitute for rubber, and a great many other things besides. What is left of the bean after the oil has been pressed out is food for cattle or manure for fields. Its home is Manchuria, where every year the bean crop is an important and controlling factor. One may almost say that Manchuria is important because it produces soya beans.

Manchukuo.—The migration of so many Chinese into Manchuria was not altogether pleasing to Japan. The Japanese did not wish Manchuria to remain a part of the Chinese Empire. So, in 1931, they established a new state and called it Manchukuo. Manchukuo is supposed to be an independent state. Its ruler is a Chinese who was formerly Emperor of China, but he wears a frock coat and a top hat, which shows that he is not so unchangeable as the Chinese are supposed to be. The main work of governing the country and opening it up to trade is in the hands of the Japanese. For all practical purposes Manchukuo belongs to Japan.

The former capital was Mukden, but in order to break

with the old order the Japanese have moved the capital to *Hsinking*, which is more central and, like Mukden, is on the South Manchurian Railway, which runs south from Harbin and is owned by the Japanese.

Three Civilisations.—Here, in the third of the big peninsulas, meet three different civilisations. The Russian civilisation has been brought eastwards by rail, but Russians, in large numbers, have not followed. The Japanese civilisation has been carried westwards by sea, but Japanese, in large numbers have, again, not followed; there are even now very few Japanese in Manchuria or Korea. The Chinese, on the other hand, who have lost control of both Korea and Manchuria, have, as we have seen, taken their civilisation with them, and gone in millions to settle and develop Manchuria.

Here, then, is another land of unrest, with many difficult questions to settle and the possibility of much future trouble.

CHAPTER VII

NORTH AMERICA

Old Civilisations in New Surroundings

HAVING seen the southern islands and the Asiatic shores of the Pacific Ocean, we now cross to North America. Upon the Pacific rim of this continent there are primitive peoples like the Eskimos of Alaska and the Red Indians of British Columbia, but their total number and their importance to the rest of the world is small.

When we think of the people of North America, it is of the white, strong, progressive men and women whom we know to be in looks, habits and speech very unlike, say, the Chinese or the Japanese. Most of these white people, however, live in the Atlantic and not the Pacific half of the continent, but, as Canada, the United States and Mexico stretch right across from one ocean to the other, we cannot separate entirely our study of the Pacific edge from that which lies so far to the east of it.

For the striking differences to be found between life on the two opposite sides of the Pacific Ocean, there ought to be some reason. Is it to be found in the geography ?

Let us look first at the relief of North America as a whole. It presents us with four main divisions :

Regions of North America.—1. The *Laurentian* plateau of ancient rock, dotted with lakes or covered with forests and very thinly populated.

2. The *Appalachian* system, consisting of a number

of parallel ranges and valleys through which there is only one easy route from east to west.

3. The vast rolling lowlands of the centre.

4. The *Western Cordillera*, a system of lofty ranges and plateaus that forms a part of the ring of folded mountains that encircles the Pacific. As it is this por-

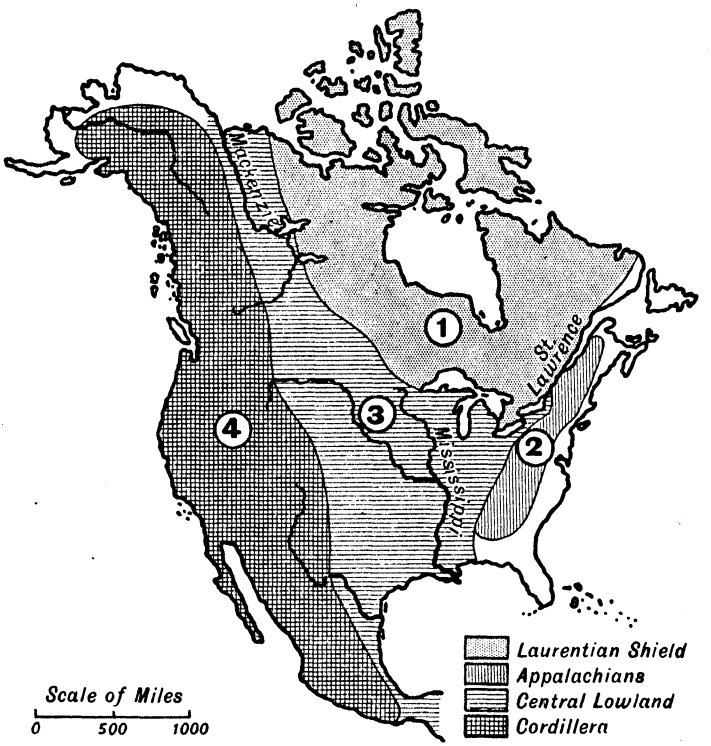

FIG. 38.—NORTH AMERICA: RELIEF.

tion of the relief that has most to do with settlement upon the Pacific coast, we must look at it in some detail. It may be thought of as a series of five strips, running roughly north and south.

(i) On the landward side, rising like a bulky wall above the plains, are the ***Rocky Mountains***. They

stretch from the cold land of *Alaska* to the hot lands of Central America, and have not one really easy passage in the whole of their length.

(ii) West of the Rockies is a great plateau, a good portion of it more than two-thirds of a mile high and, in parts, a thousand miles wide. It is crossed by other ranges of mountains that rise from an otherwise almost level floor, and is drained by rivers that have cut steep-sided valleys deep into the highland.

(iii) On the western edge of the plateau are the *Sierra Nevada* Mountains, lofty, steep and bare, with peaks rising from 10,000 to 14,000 feet, and their continuation to the north, the *Cascades*, densely

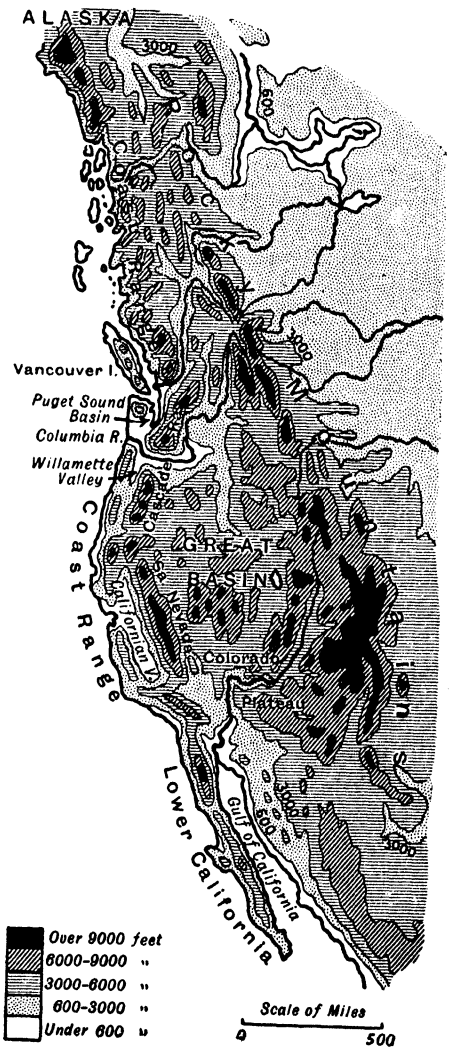

FIG. 39.—NORTH AMERICA, CORDILLERA IN DETAIL.

forested with big trees above which are snow, ice and glaciers.

(iv) Close to the sea is the *Coast Range*; in the extreme south it fills the long narrow peninsula of Lower California; in the north, beyond the Columbia River, part of it has sunk beneath the ocean, leaving here and there a number of islands, the largest of which is Vancouver, to mark its burial-place. The old valleys are filled with sea water, and form the many inlets of the north-west coast.

(v) The most important part of the west, however, is not the high lands, but a wide valley between the Coast Range and the Sierra Nevada, divided into several distinct sections by cross-pieces, as it were, of higher altitude. North of the Columbia River it is called the *Puget Sound Basin*, south of it the *Willamette Valley*. In California it is the *Great Valley*, 500 miles long. Farther south it is under the sea and forms the Gulf of California.

River Routes.—It will be remembered that the Chinese entered China by land and followed an eastward route along river valleys that led to wide plains along the edge of the ocean. There they settled and multiplied, so that that side of the Pacific is densely peopled. The first white people to enter America came across the sea and landed on the east coast, where for a long time they were shut in by the thickly forested, parallel ranges of the Appalachians. When these mountains had been crossed the great fertile plains detained the migrants, and, beyond these it was almost impossible to travel at all on account, first, of a desert and, then, of the Cordillera which we have just described. Hence the white man reached the Pacific at a late date, and his side of the Pacific is thinly peopled. Moreover, as much of it is barren, instead of fertile, a great deal of land is likely to remain thinly peopled to the end of time.

If the rivers of America and their valleys had provided natural routes to the Pacific as those of China had done, white people would probably have arrived upon

the Pacific shores very much earlier than they did. In America, the *Mackenzie* runs north into an ice-bound sea; the *St. Lawrence* runs east to the Atlantic; the *Mississippi* runs south to the Gulf of Mexico. Though the tributaries of the Mississippi were of some use in crossing the plains, there was no waterway pointing the way to the Pacific. Both mountains and rivers brought it about that movement to the Atlantic was easier than to the Pacific.

This account of the relief and the rivers and the way in which they hindered movement is not, however, the whole of the story. A brief examination of the climate will bring out certain other differences.

Climate.—We have previously pointed out (Chap. I) that there are four world belts of wind that move north and south with the sun. Two of these belts reach

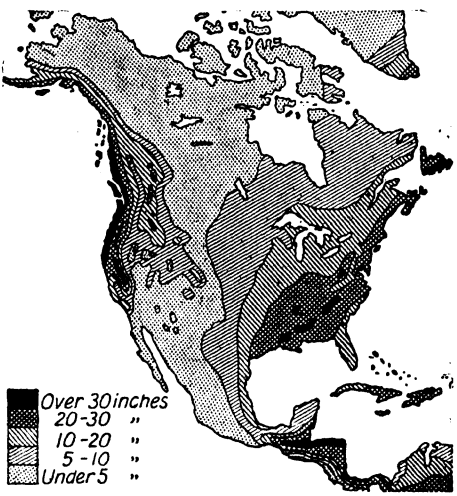

FIG. 40.—SUMMER RAINFALL IN NORTH AMERICA.

the Pacific shores of North America. The south-west winds blow all the year round, north of the Columbia River, from the ocean to the land. As they rise to cross the highlands they are cooled, and bring a heavy rainfall

to the coast. Furthermore, their warming effect in the winter and their cooling effect in the summer, tend to keep the temperature equable. British Columbia and the north-west States (*Washington* and *Oregan*) of the United States have warm summers, mild winters and abundant rainfall throughout the year. There is no such climate as this in China.

The next belt of winds, that of the north-east trades, comes across the land and brings drought, not rain. Hence there is on or near the Pacific coast of the United States, in *Arizona, Southern California* and *Lower California*, a desert; there are no deserts on the Pacific coast of China.

Finally, the wind belts move north and south with the sun. When the sun is north of the equator the dry trade wind reaches California, and most of this State then has little or no rain; when the sun goes south of the equator the west wind reaches California and most of this State receives some rain. Thus California has winter rain and summer drought, or what is known as a *Mediterranean* climate, because it is characteristic of the lands around the Mediterranean Sea. No part of China has a climate quite of this description, though the climate resulting from the alternating of the monsoons is something similar.

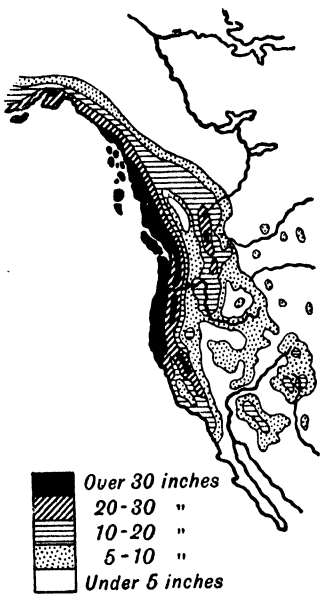

FIG. 41.—WESTERN NORTH AMERICA: WINTER RAINFALL.

The climates of North America that resemble those of China are on the east side, and in corresponding positions, as might have been

expected from the orderly arrangement of such things upon the face of the earth. Thus the Great Lakes of Canada, the St. Lawrence Valley, the most easterly of the Provinces of Canada (the Maritime Provinces) and the north-east States of the United States have a climate much like that of Manchuria, Amuria and part of Japan, while the south-east States of the United States have a monsoon climate rather like that of Northern and Central China ; the monsoons of America, however, are much weaker than those of Asia, because the land area is so much smaller.

Vegetation.—If, as is true, the vegetation tends to be similar where the climatic and other conditions are the same, then it will be upon the Atlantic and not on the Pacific side of America that one should look for resemblances to China. Rice and cotton are produced in great quantities in the south and south-east; half the world's supply of cotton comes from this area. Tea could also be grown, but black labour, which is common in America, is so much more expensive and so much less skilful than yellow labour that it does not pay to produce this crop.

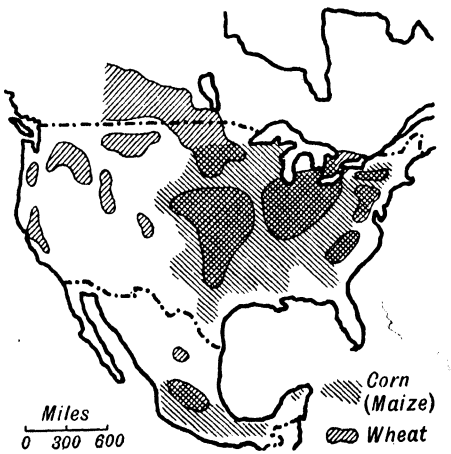

FIG. 42.—NORTH AMERICA : CORN AND WHEAT.

The white population along the American Pacific is, like the yellow population on the Asiatic Pacific, chiefly employed upon the land. The north of America, like the north of Asia, is a land too cold in winter for vegetation to grow, but south of this tundra belt there

is a wealth of forest on the northern parts of the continent. The abundant rain and mild climate are favourable to trees, and belts of pine, cedar, Douglas fir and hemlock extend along the Coast Range for 300 miles between Santa Cruz and the north of California, and again on the west sides of the Sierra Nevadas and the Cascades. Some of the trees are of enormous size. One big redwood pine-tree has been known to provide

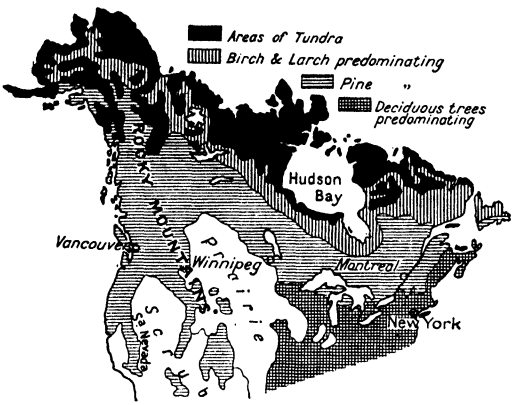

FIG. 43.—FORESTS OF NORTH AMERICA.

enough timber to frame, board and shingle a large country house, to finish the inside, supply the furniture and fit up the shelves. With so much timber, lumbering is an important occupation, but it is difficult to transport the logs to the saw-mills because of their size, and a great deal of wood is wasted.

Chinese and American Methods.—Here let us compare the ways in which Chinese and Americans (including Canadians) do their work. We have just referred to the waste of wood, and may recall that the Chinese waste nothing. On the other hand, white men save all the time and energy they can by using machinery, while most Chinese depend on their hands. For instance, in the American rice fields, the negro, wading about in the mud, has long been replaced by steam-driven or motor-

driven ploughs, rice-reapers and threshers, while artesian wells provide water for flooding the fields.

Cotton cannot be reaped by machinery because the cotton bolls do not all ripen at the same time and a machine, having no sense, does not know the difference. Despite the fact that machinery may be used for separating cotton seed from cotton fibre and for hauling heavy logs over a road-bed paved with logs or along a railway, cotton-picking and tree-felling require much hand labour.

FIG. 44.—NORTH AMERICA: COTTON AND RICE.

But one of the great differences between America and parts of Asia is that in America, while there is an abundance of land there is a shortage of labour, whereas in China and Japan there is a shortage of land and an abundance of labour. Hence the American rice-farmer does not bother with any back-aching transplanting of baby plants out of a nursery bed, but scatters his seed where he expects to reap his harvest.

Where Indian corn or maize is grown he saves labour by feeding the corn to pigs that turn it into pork

and ham, to cattle that turn it into beef, to sheep that turn it into mutton and to poultry that turn it into eggs. In some cases he even lets the beasts roam loose in the fields and do the reaping for him. In the wheat-growing prairies, ploughing, harrowing, sowing, reaping and threshing are mostly carried on by modern machinery. The first settlers were given as much land as they asked for, and they generally asked for as much as they could cultivate and a bit over. In these fertile lands there are no tiny holdings as in China ; in Dakota one wheat field was 45 miles long ; in China there are many rice fields that are not 45 yards long.

Let us return to the Pacific coast. It is only the west sides of the mountains that are wet ; the east sides and the valleys tend to be drier and warmer, and are therefore suitable for various kinds of fruit and grain.

Fruit.—The chief fruit district in *British Columbia* is the *Okanagan Valley*, where there are orchards of apples, pears and plums. Fruit, when ripe, must be picked quickly and by hand and, owing to shortage of labour, the farms tend to be no bigger than the farmer and his family can manage by themselves.

In the dry eastern section of Washington and Oregon, where the summers are warm, sage grass where it is driest and bunch grass where it is a little more moist may support sheep and produce wool. The soil, however, is so fertile that it has paid to bring water many miles from the mountains in order to convert thousands of square miles of cattle and sheep ranch into a great wheat region. Some of these wheat lands, however, obtain enough moisture through gaps in the mountains or because they slope upwards towards the Rockies. On the eastern side of the Cascades fruit is grown wherever there is sufficient water either naturally or artificially supplied. Oregon and Washington are perhaps most noted for their apples, but cherries, plums, almonds, walnuts and strawberries are all grown for market, and find their way as far east as the valley of the Mississippi.

The chief fruit district, one of the greatest in the world, is California, where the hot, dry summers of the south and centre are favourable to the vine, grape-fruit, apricot, peach, orange and wheat. The main difficulty has been shortage of water ; only a few years ago much of California was a desert waste, but irrigation has made great changes. In the *Imperial Valley*, west of the *Colorado River*, there were, in 1901, no whites and very few Indians. In 1904, there were 70,000 acres of irrigated land and 10,000 white people living on them. Water for the city of Los Angeles is brought through mountains and across a desert for a distance of 226 miles.

In the Great Valley, the mountain streams fill reservoirs, canals and ditches that water wheat farms of 10,000 to 50,000 acres, thousands of acres of alfalfa, vineyards, orchards of oranges, lemons, olives, plums, apricots, figs and other kinds of fruit, and fields of asparagus, beans, potatoes and melons. Fruit growing is now so profitable that fruit is displacing wheat and either fresh, dried or canned, is sent to all parts of the world.

Because the summer is so dry, grain can be cut, threshed and sacked ready for market as it stands in the fields ; peaches and apricots can be left to dry ; grapes can be left to become raisins, and plums to become prunes. Nearly all the raisins grown in the United States come from the *San Joaquin Valley* ; in some years the crops have been so plentiful that they have even been fed to cattle. In California, much of the cheap labour needed to harvest fruit is obtained from Mexico.

It will be seen that in Pacific North America, as in China, it is the soil that provides most of the people with the means of making a living. The American farmer, however, as already pointed out, makes friends of science and machinery to lighten his labour. Sometimes, it is true, he is not so scientific as he might be ; he cuts down trees and does not replace them and takes crops out of the ground without restoring, by means of fertilisers, the plant foods that the crops have consumed. There are fields in the Red River district of *Minnesota* and *Dakota*

that have been growing wheat for fifty years on end without the application of an ounce of fertiliser, and it is therefore only natural that the soil should be growing poorer and the yields less. In the words of the Irishman, some of these farmers are " killing the fatted calf which lays the golden eggs."

The Chinese farmer, on the other hand, is a wiser cultivator and, as we have seen, always tries to restore to the soil the foods that the plants have removed. The Americans rob the soil ; the Chinese bank in it.

Coal and Minerals.—Another great difference between Chinese and Americans is to be seen in their attitude towards minerals. China has an abundance of coal, but so far little has been mined ; America has coal which is mined and used. The greatest coal-fields in the United States are round *Pittsburg*, in the east, and in touch with the Atlantic ; those of Canada are on the edges of certain ranges of the Cordillera, and in touch with the Pacific. There is coal, not only in British Columbia, but also in *Queen Charlotte Islands* and *Vancouver Island* ; it is mined chiefly on the islands, whence it can be carried away by ships ; some of the mainland coal-fields have, as yet, no means of sending it to the sea.

Coal is not, however, the only mineral. Throughout a great length of the Cordillera there are also deposits of copper, silver, oil and gold. It was, in fact, gold that first drew men in large numbers to both California and British Columbia ; they would never have wandered so far west to farm. The yellow man reached the Pacific in pursuit of food ; the European reached the Pacific in pursuit of a yellow metal.

Fishing.—Finally, we must not forget the sea. On either side of the Pacific, fishing is an important occupation. We have said that at least 40 million Chinese make their living with nets and fishing tackle and provide a cheap and wholesome food for themselves and millions of their own countrymen. In the seas and rivers of British Columbia fishing is an occupation

followed by far fewer people, but the harvest of the deep finds its way all over the world.

The most valuable and abundant fish is the salmon, which makes its home in the salt water but spawns in the fresh. The fish are caught by nets, traps, baited lines and fish-wheels. The fish-wheels are about 24 feet in diameter and 10 feet in width. To the circumference of each wheel are fixed large scoops made of wire-netting and shaped like dip-nets. The wheels are placed near the shore in water through which the fish pass in such large numbers that they have been known to push one another out of the river on to the banks. The current of the river turns the wheels and the fish that are caught in the scoops are carried up as the wheels revolve and dumped out into chutes along which they slide into large boxes on the banks.

When the salmon are landed, by whatever means they have been caught, they are handled, be it noted, by Chinese and Japanese, who, with the aid of machines, clean, chop and can the fish for export. The chief canneries of British Columbia are at *New Westminster*, a few miles from the mouth of the Fraser.

Towns.—Because of similarities of climate resulting from similarities in position there is then some likeness between life in China and America, though the differences are so great. Even many of the chief towns occupy similar positions. Just as Hong Kong and Canton stand near the entrance to the Si-kiang, and Shanghai is some distance up the Yangtze-kiang, so *New Orleans* is near the entrance to the Mississippi and *Montreal* far up the St. Lawrence. Hankow, central and at the junction of rivers, is matched by *St. Louis*, the second biggest city of inland trade in America, at the junction of the Upper and Lower Mississippi and the Ohio; and by *Winnipeg*, the second biggest city of inland trade in Canada, at the junction of valley routes from east, west, north and south.

There is nothing in China, however, quite like *Chicago*, a junction of routes that must pass round the end of Lake Michigan to go west, or like *New York*, which owes

its position, as the largest and richest city in the United States, partly to the fact that it has easy connection with Canada by the *Hudson* and *Richelieu* Valleys, and is at the seaward entrance to the only easy route through the

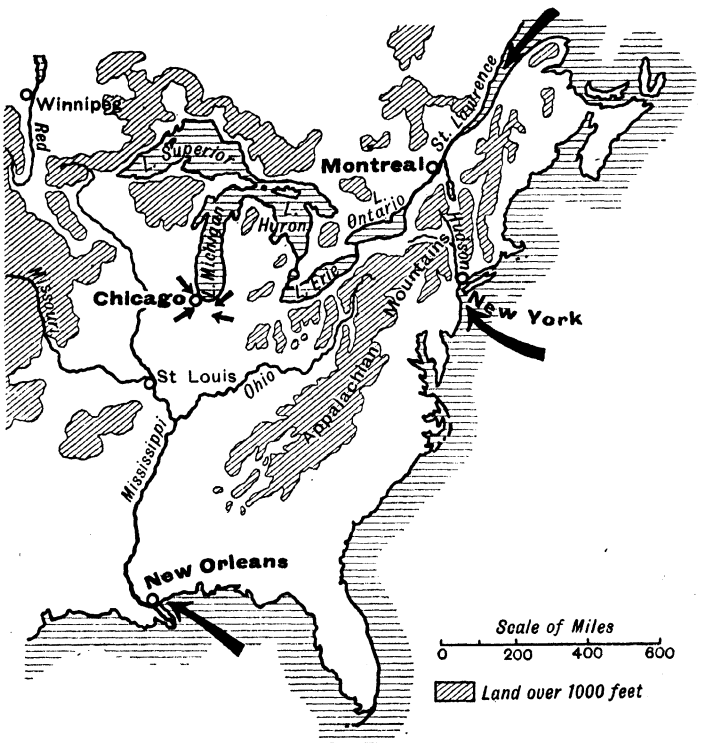

FIG. 45.—NORTH AMERICA: NEW ORLEANS, NEW YORK AND MONTREAL AT THREE "ENTRIES."

Appalachians, that by the Hudson and *Mohawk* Valleys, and partly to the fact that it is far enough south to have a harbour ice-free in winter.

Routes, also, in both China and America, follow river valleys, cross plains and make use of navigable waterways, but there the similarity ends. In China most things still move in man-drawn rickshaws, man-pushed

wheelbarrows and man-carried sedan chairs, and man, after all, in this kind of business, is but a poor kind of donkey; motor-cars, though more numerous than formerly, are rare outside the cities, and railways, in five of the provinces, do not exist. The chief highways are the canals and rivers, where, at times, the wind may blow against a sail of matting and help the men who are panting with pushing poles, though, as we have pointed out, the motor-boat is coming into use.

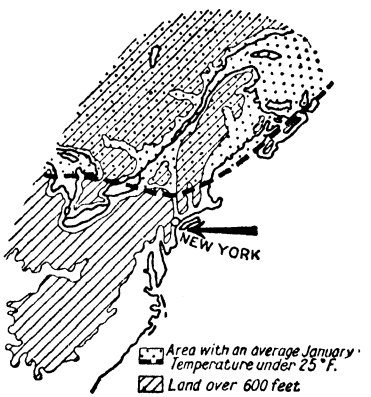

FIG. 46.—THE POSITION OF NEW YORK.

In North America, on the other hand, there are hundreds of thousands of miles of railway, motor-roads with surfaces as smooth as silk, electric cars in cities and their suburbs, steam- and petrol-driven cargo and passenger boats on lakes and rivers, and aeroplanes that journey hither and thither from one point on the continent to another.

In China, the few railways were made to connect towns that already existed; in America, railways were, in many cases, made first, and the cities at their ends and along their routes grew up later. This is particularly the case with the ports on the Pacific coast. In the beginning of American history, as already pointed out, the desert and the mountains hindered the passage to the west. There was practically nobody on that coast; there were no roads, no orchards and nothing to export, and there were therefore no ports. With the growth of population and trade, however, there was a call for ports. Unfortunately a good part of the Pacific side of America is far from being well provided with natural harbours, and little of it has easy ways into the interior.

Where such conditions are to be found man has built his largest and busiest settlements.

Canada's most northerly Pacific port is *Prince Rupert*, the terminus of a trans-continental railway, but, as yet, of minor importance.

The principal entrance to the Dominion is at the *city* (not island) of *Vancouver*, on the mainland, just where the valley of the Fraser provides a route that crosses the Cordillera. Vancouver is the commercial capital of British Columbia and the Pacific terminus of the Canadian Pacific Railway. It is a kind of ferry port from which steamers leave for Japan, China, Hawaii and Australia. The cutting of the Panama Canal gave a new connection with Europe, and much Canadian wheat is now shipped from Vancouver.

Where the magnificent deep waterway of Puget Sound offers an entrance to the United States are *Seattle*, the largest city in *Washington*, and *Tacoma*. Each has a big trade with the Far East, in such things as tea, silk, camphor and jute ; each makes from the products of the farms, forests and mines of the State such things as ships, rope, machinery, doors, boxes and tin cans for the salmon industry, and has lumber mills, packing houses and ore-smelting works.

Portland, the port of Oregon, stands where the valley of the Columbia River that provides a passage through both the Coast and the Cascades ranges crosses the valley that extends from Puget Sound to *Los Angeles*. Ships come to Portland from all parts of the world to take away lumber and boards, wheat and flour, hops and fruit.

South of Portland, until we reach *San Francisco*, land roads must everywhere cross the Coast Range to reach the sea. At San Francisco, however, there is a break occupied by a bay as big as an inland sea ; the entrance to this spacious harbour is through the Golden Gate, a narrow passage 1 mile wide and 5 miles long. Wheat, fruit, wood, silver and gold are the products on which the wealth of the city has been built.

In the south of California is Los Angeles. No city in America could better illustrate the difference between Asia and America than this " City of the Angels." It did not grow ; it was made, by men who were deter-

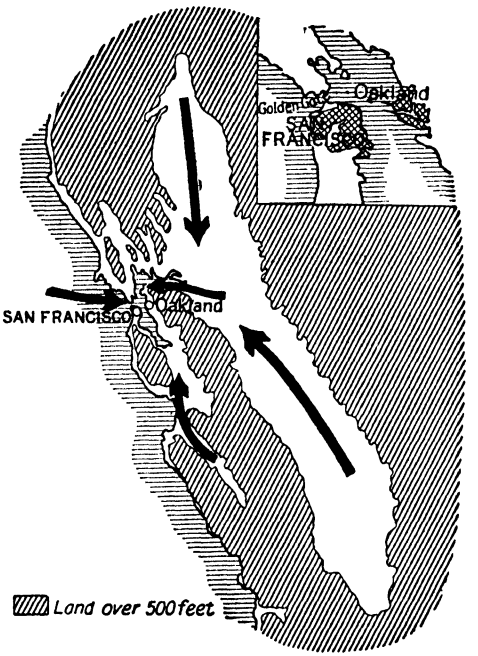

FIG. 47.—THE POSITION OF SAN FRANCISCO.

mined to have their own way, whether Nature helped them or not. Nature provided a wonderful climate, but no water ; man brought the water, turned a desert into a garden, built in the garden a city that is rich and sometimes beautiful, harnessed the sunlight to the film factory and used it to attract tourists and invalids. By way of contrast to the quiet peace of many a Chinese or Japanese city, Los Angeles, now bigger than San Francisco, is one of the noisiest places on earth.

A way over the mountains was found to the east ;

this is now followed by rail and road. A way had to be found to the sea, for Los Angeles was inland and needed a port. Fifteen miles away was a place where a port might be made, and, in the face of all kinds of difficulties, harbours, docks, piers and warehouses were built. *San Pedro*, as this new port is called, is already well on its way to a position amongst the first three or four ports of the country.

Peoples of North America.—If we look back for a moment we shall see that, after all, the United States and Canada offer much the same climates, soils and opportunities as China. The greatest differences are not those in Nature but in man; the people are different and have had a different history, and on that account make a different use of similar opportunities. The people of Canada and the United States are Europeans in a new setting; though Americans are different from Europeans, there is, as yet, no such thing as an American civilisation.

The people of North America are not more energetic than the Chinese, but, because they were brought up along other lines, they do things in a different way. Consider the ways in which the two countries are organised. Each is divided into provinces or states. In China each province is often a geographical unit, separated from the next by natural barriers that tend to prevent intercourse; in America the State boundaries are often nothing but straight lines. In China the people in each province write the same language, but pronounce it so differently that the people of the north cannot understand the speech of the south unless they use the new national language; in America dozens of languages are spoken by the descendants of various nations, but everybody also speaks English, so that, north of Mexico, people all over the continent can always understand each other. The provinces of Canada and the United States are, by a common language, common interests and a stable, central government welded into real unities; the provinces of China are much more loosely connected.

Chinese and Japanese in North America.—The eastern side of America was peopled from Europe. It would not have been surprising if the western side had been peopled from Asia. But it happened otherwise. With the development of the west, however, the Chinese and the Japanese have to some extent made their way to America. Whole districts in the various ports and cities are inhabited solely by Asiatics who make their living by fishing, lumbering, farming, market-gardening, laundry work and domestic service.

Life is easier in America than in Asia, and the chances to make money are greater. If the gateways were more widely opened millions of Asiatics might flood the American continent. The distance from Tokyo to San Francisco, which is the same as from Tokyo to Sydney, is great but not too great, as is proved by the thousands who have already crossed the ocean, but the Governments of both Canada and the United States will not allow the Chinese and the Japanese freely to enter their countries. Asiatics work for a much lower wage than the white man, who would often like to keep all of them out. As it is, he puts taxes on their admission, limits their numbers, and so offends the Governments of both China and Japan. The whole question is a very difficult one, but the action of the white man is quite natural.

CHAPTER VIII

CENTRAL AND SOUTH AMERICA

We have seen in the previous chapter that the people in North America live in a manner very unlike that of the people of Asia, partly because the geographical conditions are different and partly because they are not of the same race. What about Central and South America? We know that there is order everywhere in the world, and we have seen this order illustrated by the arrangement of the winds north and south of the equator. We might therefore expect that south of the equator, in South America, winds, rains, crops and ways of living would be similar to those north of the equator in North and Central America. Are they? We may begin as usual with a brief account of the relief and the climate.

Relief.—The outstanding feature of the relief of South America is the western Cordillera, the *Andes*, which like that of North America runs throughout the whole length of the continent; the total length of it is 4,500 miles. In the south it forms a single chain of mountains, but elsewhere it is more like the Cordillera of North America and contains high plateaus with two, three or even more ranges on its borders.

The Andes may be divided into three regions:

1. *South.*—Here they rise steeply from the sea with their bases ever beaten by the ocean waves and contain lakes, waterfalls and glaciers. In places the land has sunk and the shore line, with its many harbours and outlying islands, resembles that of British Columbia.

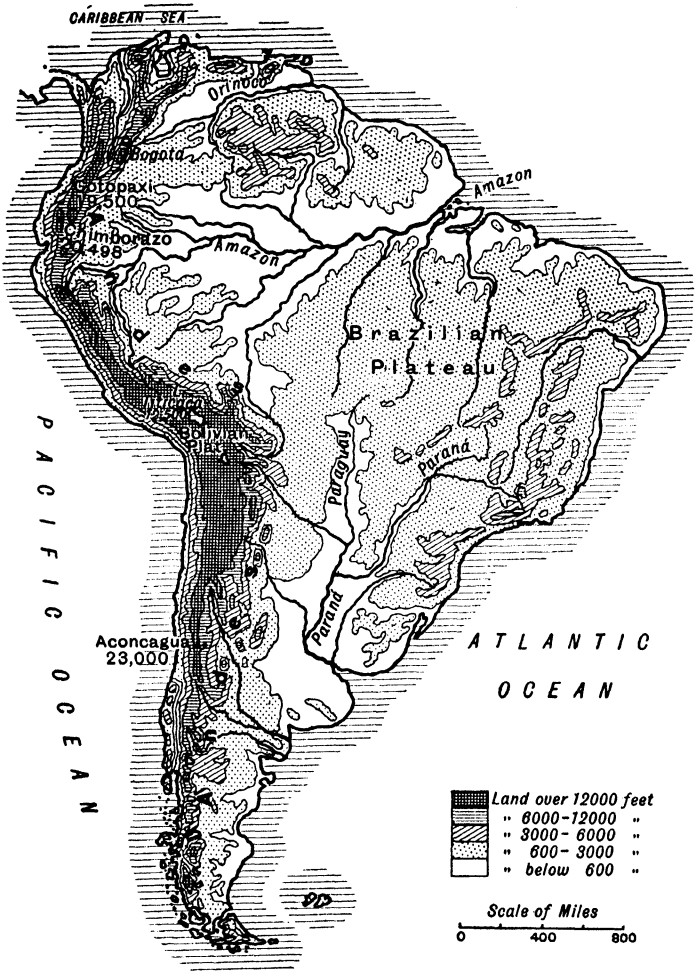

FIG. 48.—SOUTH AMERICA: RELIEF.

2. *Centre.*—Here the Cordillera, as in North America, is at its widest, but whereas in North America it is 1,000 miles wide, in South America it is only about 500 miles wide. On the other hand, it is much higher. The

broader part contains the plateau of *Bolivia*, where there is rock enough to cover the whole of the southern continent to a depth of nearly 400 feet. On it lies Lake *Titicaca*, which, like the Great Salt Lake in a somewhat similar position on the Cordillera plateau of the United States, is fed by melting snows, never overflows, sends no rivers to the sea and so is very salt. Its height above sea-level is 12,500 feet, 8,000 feet higher than the Great Salt Lake, 5,000 feet higher than the summit of Kosciusko, the highest mountain in Australia, and higher by a few feet even than Mt. Cook, the highest mountain in New Zealand.

3. *North.*—North of the equator, there are three ranges. These run out edgewise to meet the ocean, so that their valleys open up roads from the Caribbean sea to the interior. This section of the Cordillera contains the plateau of *Bogota*, a treeless plain surrounded by a rim of treeless mountains.

The Cordillera next passes through Central America into Mexico, where, again, there is a high plateau between steep edges that often rise to a height of 10,000 feet. The eastern edge, the *Eastern Sierra Madre*, is continued in the Rocky Mountains ; the western edge, the *Western Sierra Madre*, is continued in the Sierra Nevada. The Central plateau resembles the high dry plateaus in the south-west of the United States.

The passes across the Andes are, for the most part, at a great height ; some of them are 15,000 feet above sea-level. The journey across the Cordillera is everywhere so difficult that there are often no roads, not even a mule track ; there is only one direct trans-continental railway instead of several as in North America. It is, however, possible to reach the Pacific from *Buenos Aires* via *Tucuman* and through *Bolivia* at either *Antofagasta* or *Arica*.

Volcanoes and Earthquakes.—The Andes are the highest part of the great girdle of mountains that ring the Pacific and have their full share of volcanoes and

earthquakes. They contain more volcanoes than the Cordillera of North America, and are more disturbed by earthquakes. On the plateau of *Quito* there are no fewer than twenty-nine volcanoes, the highest of which are Chimborazo and Cotopaxi. In 1879, Cotopaxi, the highest active volcano in the world (19,500 feet) erupted, covered the surrounding country with 3 feet of pumice stone and turned it into a desert; the force of the explosion was so great that a rock weighing forty tons was thrown for a distance of 20 miles. Aconcagua (23,000 feet), the highest peak in the Andes, just south of the Tropic of Capricorn, is another volcano, but extinct.

Across Mexico, where the Eastern and Western Sierras meet, is a broad volcanic belt running east and

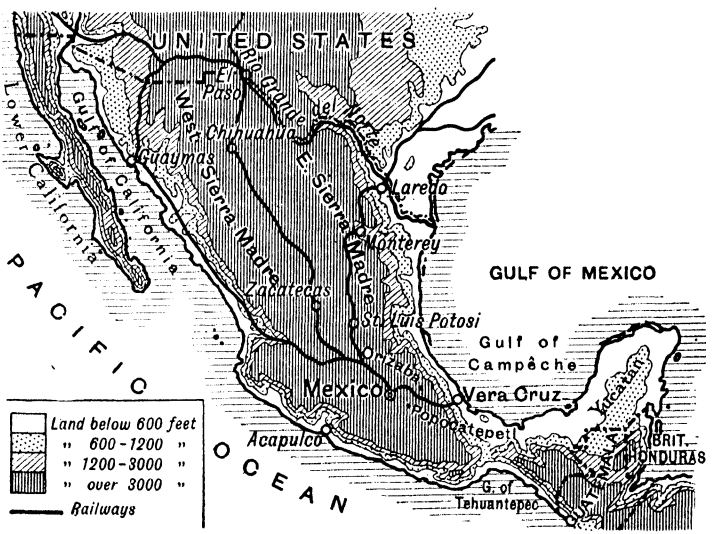

FIG. 49.—MEXICO.

west, whose chief summits are Orizaba and Popocatepetl.

As earthquakes are common and sometimes very severe, houses tend to be low light frameworks of wood fastened together with straps of leather and plastered over with mud.

On the west, as in North America, the Cordillera slopes steeply to the sea and leaves room for but a very narrow coastal plain ; on the east a more gradual slope leads to the low-lying plains that are drained by the *Orinoco*, *Amazon*, *Parana* and *Paraguay* Rivers.

Finally, as in North America, there is another highland area in the east ; the great plateau of *Brazil* is not more than 1,000 feet to 3,000 feet in height, but it covers a great extent of country.

It will be seen that the relief of South America has some resemblance to that of North America. There are, however, some important differences. On the west of each continent there is high land, but it is narrower, higher and steeper in South America. On the east of each continent there is also high land, but it is a broad plateau in South America and a series of parallel ranges in North America. Between the eastern and western highlands, there are, in each continent, broad plains that are crossed by rivers that flow, not to the Pacific, but to the Atlantic. Whatever differences there may be between life in North America and South America, they are not likely to be due, to any great extent, either to the relief or the rivers.

Climate.—Let us look at the climate. Note first that the equator crosses the broad part of South America ; a great deal of Mexico, all Central America and quite two-thirds of South America lie between the tropics. This of course implies that South America is warmer than North America and in parts very hot. Moreover, the south of *Chile* is not so far from the equator as are Alaska and Northern Canada ; the shores of Cape Horn are never frozen.

Wind Belts.—Next notice the position of the wind belts. Both the north-east and south-east trades blow in towards the basin of the Amazon at all times of the year and bring moisture from the ocean. As in other equatorial lands this moisture is condensed and falls in torrents to the accompaniment of much thunder and lightning. In July, when the sun is north of the equator,

the centre of this rain-belt is also north of the equator and covers the north coast of the continent ; in January, when the sun is south of the equator, the rain-belt feeds the southern tributaries of the Amazon—much of the plateau of Brazil. In both seasons the south-east trades bring a heavy rainfall to the eastern edge of the plateau in Brazil and a moderate one to the basin of the Parana.

The trade winds, in their passage across the continent, lose moisture ; the rainfall decreases from east to west. The Andes are so high that surface winds seldom cross ; if they do, they descend as dry land winds and bring no rain to the Pacific sea-board. There is in their path an intensely arid area marked by the *Atacama Desert* of North Chile, and, stretching almost to the equator, by the rainless coast of *Peru*. This warm desert corresponds in position to that of Arizona in North America.

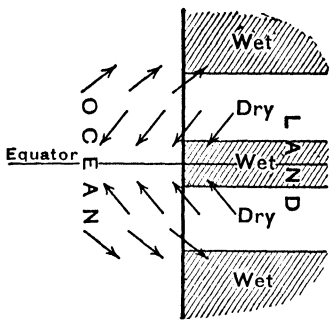

FIG. 50.—CLIMATE BELTS.
This shows the relation to the wind belts of the rain belts on the west of continents if the former did not move.

In the south of the continent, the north-westerly winds bring heavy rainfall at all seasons to the sea-facing slopes of the Andes, just as in North America the south-westerly winds bring heavy rains to the sea-facing slopes of the Cascades. The Andes in South Chile are, as we have remarked, less lofty than elsewhere, and the winds can pass over them. Such winds, as they descend to the plains, become warmer and drier, and their track is marked, in the south of Argentina, by the Great Shingle Desert.

Central Chile lies, like California, between the trades and the westerlies, and so has the same kind of climate—winter rains and summer drought. Central America and

the region north of the Amazon forest on the one hand and the region south of the Amazon forest on the other, have rain in summer and drought in winter.

Climate Belts.—It will be seen that the climates of the Pacific coast north of the equator are much like those south of the equator, and are arranged in the same

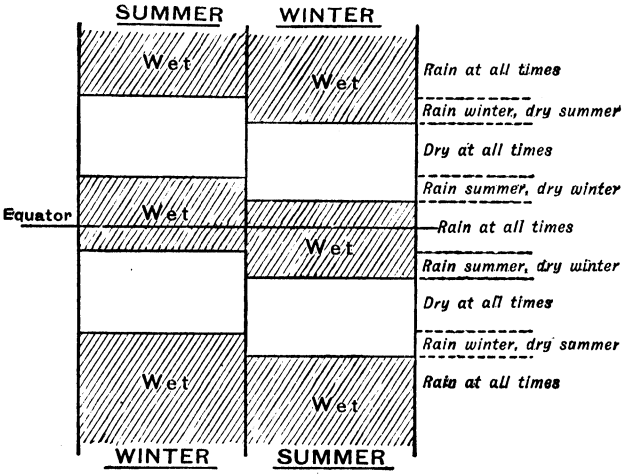

FIG. 51.—CLIMATE BELTS.

As the wind belts move north and south the rain belts also move.

order with regard to their distance from the equator. These west-coast climates can be arranged as follows :

1. Cold.	Dry.		Tundra.	North of North America.
2. Equable.	Wet.		Forest.	British Columbia.
3. Hot.	Dry summer. Wet winter.		Grain, fruit.	California.
4. Hot.	Dry.		Desert.	Arizona.
5. Hot.	Wet summer. Dry winter.		Savana.	Central America and north of the Amazon forest.
6. Hot.	Wet.	Equatorial Forest.		Amazon basin.
7. Hot.	Wet summer. Dry winter.		Savana.	South of Amazon forest.
8. Hot.	Dry.		Desert.	North Chile.
9. Hot.	Dry summer. Wet winter.		Grain, fruit.	Central Chile.
10. Equable.	Wet.		Forest.	South Chile.

Except upon the coast the resemblances are not so close. The broadest part of North America lies in cold or temperate regions and the climate tends to extremes ; the broadest part of South America lies in a very hot wet region, so that a great part of South America is entirely different from anything in North America, and corresponds rather to the East Indies. The narrow southern part of North America is in the belt of warm trade winds; the narrow southern part of South America is in the belt of cool wet westerly winds. In addition, it may be pointed out that South America does not extend far enough south of the equator to possess a tundra region.

Because of the differences in build and the position of the two continents with regard to the equator, South America does not exactly repeat the conditions found in North America and some differences in the way people live are therefore to be expected. The differences, however, are actually greater than might be expected by considering merely climate and relief. In all South America, for instance, there is very little land that could not produce something, yet from some parts little or nothing is sent to markets either at home or abroad ; the southern continent, compared with North America, is, in fact, in a very backward condition.

Primitive Peoples.—Perhaps we may understand why this might be so if we examine the characters of the people. In the lowlands, round the equator, where the climate is something like that of the larger islands in the East Indies, are a number of primitive tribes, some of whom roam the forests like wild beasts, go naked, have no dwellings, sleep on the damp ground or on the ashes of their fires, and have tools and weapons of wood only. They are, indeed, less civilised than the natives of the Pacific Islands. Unlike the North American Indians, most of whom were hunters, the tribes of the Amazon are mostly fishermen, for movement, except on the rivers, is everywhere difficult on account of the dense forest.

It is not the fault of these people that they are so backward. The high temperature and the heavy rainfall tend to put a stop to any exertion that is not necessary. The temperature is often higher than that of a man's body, but perspiration, Nature's great cooling device, is hindered by the dampness of the air. The conditions are too hard for a primitive people to overcome unaided. The only kind of person who could live in a civilised way in the Amazon basin would be someone clever enough to fell the trees and cultivate the ground with machinery. So far, few white men have been daring enough to try. On the whole, they do not appear to be attracted by the idea of clearing and draining the forest or even of collecting its products in an orderly way in the face of fever and the deadly effects of damp heat.

At the other end of the continent, in the dry desert of *Patagonia*, life is equally hard; it is as difficult to live in a land where there is little or no water as it is to live where there is too much. A few tribes who paint their faces and bodies, hunt animals with dogs, dress in skins and live in skin tents, have their abode in this unfriendly country, but many of them must often suffer from hunger, thirst and cold.

We may say of all these very simple people of the forest and the desert that they are of little importance in the life of the continent. They are not, however, the only natives; there are other Indian tribes, some of whom were, at one time, the most civilised of all the American peoples. They lived on the high plateaus, the steep ascents to which were often through thick forests. In the cooler climate and greater safety of these highland regions they lived comfortably and happily. They learned to irrigate and farm the fertile soil and to dig silver from the ground; farming and mining kept them at home, so they built houses, granaries and even fortresses, wove blankets and made beautiful baskets and pottery.

Civilised Indians.—The most civilised of these

Indian tribes were the Aztecs of Mexico, the Mayas of Central America and the Incas of Peru. The language of the last is still spoken by Indian tribes from Ecuador to Chile. The Incas were even better protected than the Aztecs and, during the hundreds of years they ruled the plateau, they reached a position of great strength. They grew corn, potatoes and tobacco, built stone houses and temples, ornamented the temples with gold and silver, had fine armies, made splendid roads, used bronze tools and even had a kind of postal service, for though they could not write they sent messages by runners.

European Influence.—What these Indian tribes might have done for South America in our own day, had they been left alone, it is impossible to say. They were, unfortunately, not left alone. Just as people went from Europe to settle in North America, so also other Europeans went to settle in South America, but the two continents drew their white populations from different parts of Europe.

North America was explored and settled by Scandinavians, Dutch, French and English ; Central and South America was explored and settled by Spanish and Portuguese. Some of the differences in the rate of progress and the state of civilisation are partly due to this fact. The North European is business-like, scientific and energetic ; the South European, though usually more artistic, often prefers to put off till to-morrow anything that he dislikes doing to-day.

Then, too, the two sets of Europeans treated the native races in different ways. In North America, the Indians were proud, fierce hunters with whom the English and French traded and fought. Otherwise there was very little intercourse, and except in the case of a few French trappers, the white settlers did not marry the native women, as English women as well as men came to North America. The colonists cut down their own trees, farmed their own lands with their own hands and lived on what they themselves produced.

In South America, many of the Indian tribes were farmers who were much more easily conquered. They were enslaved by the Spanish, who divided the land amongst themselves and lived on what the natives produced. The climate was warm, and hard, and manual labour was more distasteful to the Spanish than to either the English or the French.

The Spanish at first brought no women from Spain; even after they had taken possession of the country few new settlers came. They married the Indians, and after a few years there was a large population, half Indian and half European, called *Mestizos*. In Mexico to-day, out of 15 million people, about 8 millions are Indians, 6 millions are mestizos and the rest Spanish. In the countries of Central America and the Northern Andes, the greater part of the population is Indian. In Peru and Bolivia, out of 6 million people 3,500,000 are Indians, 1,500,000 are mestizos and the rest are Spanish. There is nothing like this in North America.

In North America, for a long time after the arrival of the white men, few, if any, mines were discovered or worked; in South America, on the other hand, the regions first conquered by the Spanish were rich in gold and silver, and the natives were forced to work in the mines as well as on the farms. They were so cruelly treated that they died in large numbers, while their new masters rapidly became rich and lived in ease and luxury.

Lastly, there was a great difference in the ways in which parts of the two continents were governed. In North America, the English settlers almost governed themselves; in the Spanish colonies the settlers were ruled by Governors sent from Spain. These men either carried out orders received from home or themselves made such laws as they pleased. The people, as a whole, never had any practice in ruling themselves, and to this day some of them seem to find it difficult to manage their own affairs.

When, after many years, both English and Spanish colonies separated from their Mother Countries, the re-

sults of the two ways of ruling became very important. In North America, two great flourishing, well-governed countries—Canada and the United States—have arisen ; in South America, most of the States are more or less backward, railways are few except in *Argentina*, and civil wars and revolutions too common.

The most stable and important countries are those of the south—Argentina and Chile ; this is partly because, for the greater part, they have climates that encourage work, like those of Europe and most of North America and Australia. They have inhabitants of several European stocks, and are more easily entered from the sea. Their one big disadvantage is their distance from the thickly populated lands north of the equator.

Argentina.—The most important part of Argentina lies round the estuary of the *Plate* River and is known as the *Pampas*. The true pampas, a sea of grass, extends from the Atlantic about half-way across the continent. To the west and south, where the climate is drier, the grass lands pass into poor steppe lands and finally into barren deserts.

This is naturally a cattle land and the pampas support an immense industry in chilled and frozen meat, meat extracts and hides, much of which competes with that of Australia. The eastern side of Argentina has fertile soil, spring rain and a dry hot summer, conditions suitable for wheat. Agriculture has grown rapidly during recent years, and now the grain export is greater than that of the meat. On the Patagonian steppe-lands, sheep-rearing is important. The best breeds of sheep have been imported from Australia and, in time, it is possible that Patagonia may rival Australia in the production of wool and mutton.

Chile.—Chile, like Argentina, is far enough south to be cool enough for white people to live there in comfort, though it is such a long narrow country that it stretches in the north into one region where it is too dry and southwards into another where it is too wet to support a large population.

Chile, separated from Argentina by the Andes, can indeed be divided into three regions :

1. South Chile in the west wind belt ; cool, rain at all seasons.
2. North Chile in the trade wind belt ; warm, dry at all seasons.
3. Central Chile between the two ; warm, rain in winter only.

South Chile.—In South Chile, which partly resembles British Columbia, or the South Island of New Zealand, the seaward side of the mountains is thickly forested, and there is a little lumbering. In the valleys and on the grassy tracts sheep and cattle are reared ; in the narrow sea inlets, fish are abundant, and on the shores of some of the islands, seals are caught. As hunting and fishing are the chief occupations the land is thinly peopled and there are few cities.

North Chile.—North Chile is a desert, the Atacama. Between the Andes and the coast mountains is a belt of land about 500 miles long and 10 miles wide, where nitrate, used all over the world as a fertiliser, is found in enormous quantities, mixed with other valuable minerals such as salt, borax and iodine.

The nitrate beds lie near the surface, and are broken up with dynamite. The lumps are left to dry, crushed and then boiled in iron tanks till the water is saturated. The solution is drawn off and purified and the nitrate separated out in crystals. All the water needed for the preparation of millions of tons of nitrate is brought from the Andes in pipes and, because it is precious, is used over and over again.

The mountains that rise from the desert are dry and treeless, but they contain copper, lead and other minerals, and wherever water can be obtained, mines and miners are to be found. In this dreary part of the earth, where there is no plant life, no timber, no grass for cattle, no wild animals and no food of any kind, all that the workers

need—food, clothes, machinery and water—has to be brought from far away. It is, however, not the Spaniards who work the mines and the nitrate fields, but Americans, English and Germans. It is they, too, all over the continent, who have made the railways, built packing houses and provided ships to do the trade of the continent.

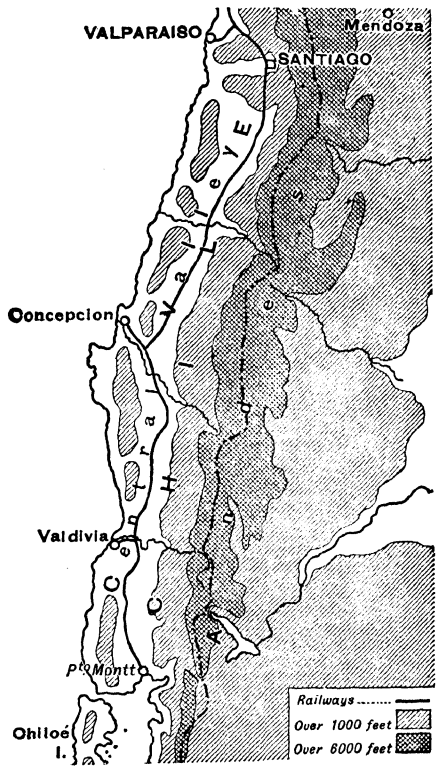

FIG. 52.—CENTRAL CHILE: RELIEF.

Central Chile.—Central Chile is the section that provides the most suitable homeland for white men. Like California, it contains a long narrow valley, enclosed between the Andes and a coastal range of mountains. In this central valley, between 600 and 700 miles long, are most of the people, cities, villages and farms. It is this "Garden of South America" that is the real Chile.

Because the summer is dry, irrigation is necessary as in California; the water is supplied by snow-fed streams from the Andes. Most of the fertile land is owned by a few rich farmers who usually live at ease in the capital while their overseers take care of the farms. The peasant, who does the hard work, is

often an Indian or a half-breed who lives in a two-roomed mud hut, and is paid for his labour with a piece of land on which to grow food for himself.

The warmth and dryness, as in the central valley of California, are favourable to the growth of grain and fruit. Vineyards, fields of wheat and corn, orchards of peaches, gardens rich with beans, onions, tomatoes, strawberries and melons, all form part of the valley landscape. The surplus crops are exported, via the Panama Canal, to New York, where they find a ready market in winter as the Californian crops do in summer.

The central valley of Chile, like that of California, has a big port at an opening to the Pacific Ocean. This port, *Valparaiso*, is near the centre of population and at the end of the railway from Argentina; its harbour, which is really an open roadstead, is always full of vessels—coasting steamers that run to places on the Pacific, others from San Francisco, from Australia with coal, and from Europe, round *Cape Horn* or through the *Strait of Magellan*.

The capital, *Santiago*, is at the northern end of the valley, but high enough to escape the sultry heat of the lowland. At an elevation of 1,800 feet, the temperature, in the short winter, may fall below freezing-point and cause a little discomfort, as few houses have any stoves or fireplaces.

Other Pacific Countries.—The other Pacific countries of South America are much alike in many ways, and might easily have united to form a single State or a group of States, but as a rule they have been rather unfriendly to each other and often at war. They are threaded, as it were, like beads on a string along the Andes. With a solitary exception, they have one boundary on the sea and the other down in the forests, where nobody lives.

There is, of course, quite a good reason for this. At sea-level in equatorial lands it is hot, but higher up it is cool, so most of the people live on the plateaus.

In *Peru*, for instance, which is the land where the Incas lived, few people live at a lower level than 7,000 feet. The chief markets and capitals must therefore be up on the highland. At the same time, because there must be

FIG. 53.—RELIEF OF SOUTH AMERICA.

sea outlets for things that are to be sold, there are ports in the lowland.

Colombia and *Ecuador* resemble each other in having a low, hot coast strip where cacao (from which cocoa is made) is grown, landward slopes with forest, grass and sometimes snow, and a high, cool plateau. *Bogota*, the capital of Colombia, is at a height of 8,000 feet. *Quito*, the capital of Ecuador, is at a height of 9,000 feet.

Though Quito is on the equator the climate is never really hot; at the same time it is never really cold. Until recently there were no fireplaces in any of the houses, and all cooking was done over charcoal fires.

The port of Ecuador, *Guayaquil*, at the head of a large harbour and at a distance of 100 miles from the sea, stands on lowland which is constantly flooded in the rainy season. Though modern drainage is improving matters it is very unhealthy. But it is the first large port on the west coast of South America, south of the Panama Canal; its chief export is cocoa.

Peru includes a dry, sandy desert coast crossed by rivers that water fertile valleys, table-lands where most of the people live, mountains, ravines and part of the vast equatorial forest of the Amazon. The old capital, *Cuzco*, where great Inca ruins are still to be seen, was too far from the sea for the Spaniards, and they built a new capital in an almost rainless district at *Lima*. The houses at Lima are of sun-dried mud with walls several feet in thickness and flat roofs made of light poles covered with earth. Streams from the mountains irrigate fields of grain, vineyards and orchards, and supply power for the electricity that lights the city and drives the street cars.

Lima is connected by rail with its port, *Callao*, 8 miles away; this port has one of the best harbours on the west coast and does most of the foreign trade of Peru. The connections with the interior, except by the railway, are simply bad roads and mule paths.

The one Andean country with no coast is *Bolivia*, part of which is covered with equatorial forest. The inhabited portion is a high barren plateau, where the capital, *La Paz*, lies in a deep sheltered hollow, 2 miles above sea-level. It stands at the junction of several routes, of which the most important, to the Spanish, led through a gorge to a trail in the forest and then to Argentina and the River Plate. From the silver mines in the State millions of pounds worth of silver have been obtained, but tin is now more important.

Mexico.—In *Mexico*, as in the Andes, the capital, *Mexico City*, is on the plateau, and its ports, Vera Cruz and Acapulco, on the lowland. *Acapulco*, with a large, well-sheltered harbour and a railway leading to the plateau, is a port of call for ocean steamers between San Francisco and South America.

It will be seen that most of the cities, whether upon the plateau or the coast, are not well situated. The people, who are still very largely Indians, live away from the unhealthy parts, and because of the steepness of the mountains find it difficult to travel between the plateau which they inhabit and the port where business is done with the outer world. Perhaps this difficulty of finding suitable sites for settlement may also have something to do with the backward state of the Pacific countries of South America.

Spanish and Portuguese.—All over the continent the people keep to their old habits and ways of looking at life. Spanish and Portuguese are still the common languages, and houses are often built after fashions learned in South-west Europe. *Buenos Aires*, in Argentina, is the largest Spanish-speaking city in the world. It also contains many Italians, who, being from South Europe, feel more at home there than they do in the United States. They do not live in separate districts as they do in New York, but become Argentines, drop Italian and speak Spanish (with an accent) instead.

Pan-American Railway.—On the American side of the Pacific, there is a Pan-American Union whose aim is to try to make a kind of League of American Nations. Out of this movement has come the idea of a Pan-American railway to connect Alaska with Argentina. Some parts of it have already been built. It is possible to go by train from San Francisco through Mexico and Guatemala to Salvador and almost all the way from *Bahia Blanca* to Peru. Portions of the road are also completed in Peru, Ecuador and Colombia. If each of the countries through which the railway would have to pass would build some hundreds of miles of fresh line, it

would then be possible to go by train through the entire length of North America, Central America and the Panama Isthmus, over the high plateaus of South America and down to the grassy plains of Argentina and so to Buenos Aires and Bahia Blanca.

Such a line would cut great rivers at right angles and be, at many points, in touch with the sea, but the expense and difficulty of making it will be so great that it cannot be completed for a long time to come. Some of the difficulty arises from the fact that the various countries through which it would have to pass differ widely in conditions of living, customs and language.

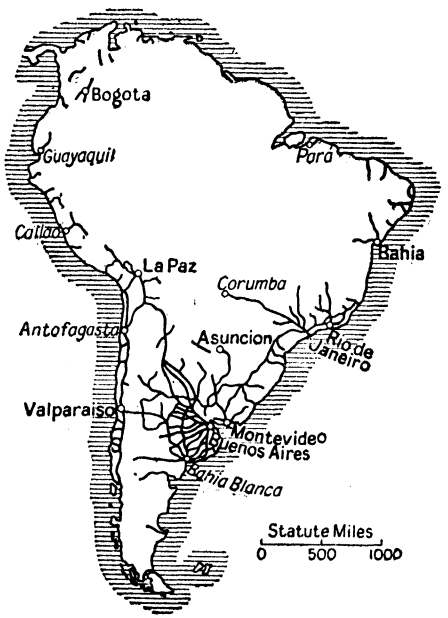

FIG. 54.—RAILWAYS OF SOUTH AMERICA.

It must not be forgotten, however, that in these days the aeroplane is a valuable alternative to the railway. South America lends itself to the development of air traffic and already established lines traverse a good part of it.

And now we may ask, without answering, the question, "How are Australia and New Zealand affected by the Pacific countries of America?" They are certainly separated by wide distances. It is about as far from Melbourne to Panama as it is from Melbourne to the

North Pole. It is as far from Hobart (Tasmania) to Cape Horn as it is from Hobart to Tokyo. It is as far from New Zealand to the mainland of South America as it is to the mainland of Asia. Down to 1914 the only entrance from the Atlantic to the Pacific was round the south of South America in face of the strong west winds of this region. The strength of the winds made this a better way out than a way in, and sailing-ships often used it on their way home to Europe.

In 1914, however, the opening of the Panama Canal gave Australia and New Zealand a new and easier route via the Pacific both to the east side of America and to all parts of Europe. This route saves 3,000 miles between New York and Melbourne, though it is not shorter than the journey between Australia and Europe via the Cape. One of the great benefits of the canal is that it is in a part of the world where many important routes are bound to meet. It is one of the important entrances to the Pacific. Many different peoples have an interest in it, not only those of the little Republics of Central America, but all those who travel about the world either for trade or for pleasure.

CHAPTER IX

NORTHERN AUSTRALIA

We have now seen something of the more important parts of the Asiatic and American shores of the Pacific. We have yet to consider another continent, Australia, and another country, New Zealand, each of which has interests in the same ocean. We will begin with Australia, the smallest of the continents, having an area, however, equal to that of the United States of America. It is so placed on the surface of the earth that it is divided into almost equal parts by the Tropic of Capricorn, with its north coast in the equatorial belt. We should, therefore, expect to find in North Australia conditions of life and climate something like those we have found in other lands within the same belt. Before, however, we consider any section of the continent in detail, it will be well to look at the climates of the continent as a whole.

Climate.—The northern coast of Australia is not a great way from the equator; the southern coast is about as far from the equator as California or Central Chile. The northern section is everywhere hot, while the southern section is everywhere warm. The compact shape of Australia has a great effect; in the neighbourhood of the ocean there is only a moderate difference between the temperatures at midday and at midnight, whereas inland the difference is often considerable. One of the most striking features of the Australian climate is the amount of sunshine. The sky is seldom covered with clouds for a long period, and the cold grey days

that are common in such lands as Britain are hardly known.

The chief winds are the south-east trades, which blow from the ocean towards the greater part of the east coast. They pass over the warm East Australian Current, and are therefore warm as well as wet. As they rise to cross the Great Dividing Range they are cooled and the moisture is condensed; there is thus a heavy rainfall on the east, but the wet belt is narrow owing to the nearness of the mountains to the coast. As the winds pass farther inland they lose more and more moisture, and there is an arid region in the west corresponding to the Atacama Desert in North Chile or that of Arizona in the United States of America.

The only part of Australia that is far enough south to be always in the west wind belt is Tasmania, where there is, therefore, rain all the year round, particularly on the west coast. The east is drier, but as the island is narrow, there is no arid region.

Between that part of Australia where the trade winds always blow and Tasmania where the "Brave West Winds" are equally constant is the region where the belts move north and south with the sun, and where, therefore, the climate is one of winter rain and summer drought. This region, whose climate is like that of California and Central Chile, includes the south-west of West Australia and the south of Victoria.

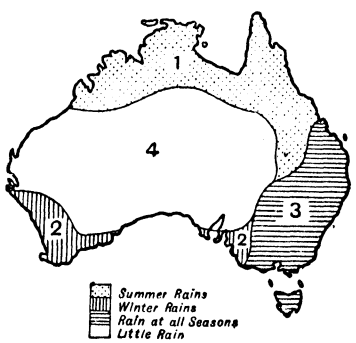

FIG. 55.—THE CLIMATES OF AUSTRALIA.

In Chapter III we saw how the great land-mass of Asia upset the orderly arrangement of the wind belts, and put in their place other equally orderly winds, the monsoons. Something of the same kind of change takes

place in parts of Australia. In summer (December) the interior is greatly heated, and winds from the sea tend to reach farther inland and bring much rain to the north-east; in winter (July) when the sun has gone north, the land cools. The winds tend to move outwards and the north is drier. Australia is smaller than Asia, so the Australian monsoons are much weaker than those of Asia, and it is only the north that has a real monsoon climate.

We can, generally speaking, say that Australia has *the following climates*:

North . . .	Monsoon.	Summer rains, winter drought.
South and South-west	Mediterranean.	Winter rains, summer drought.
East . . .	Trade winds.	Rain at all seasons.
Tasmania . .	West winds.	Rain at all seasons.
Centre . . .	Dry.	Little rain at all.

Of course, the climatic divisions are not always quite so regular as the above brief statement suggests, and, if we consider day to day happenings, we get results which, though also quite orderly, do not, at first sight, seem to fit into any such simple scheme.

Cyclones and Anti-cyclones.—The daily variations in Australian weather are due to anti-cyclones; these are winds circulating in an anti-clockwise direction if viewed from above. The anti-cyclones pass rather regularly across the continent, but are farther south in summer and farther north in winter. Between one anti-cyclone and the next there is often a cyclone, when the winds circulate in a clockwise direction.[1] Some of the cyclones come from the north and some from the belt of westerlies in the south.

Fig. 56 shows the passage of an anti-cyclone; it should be noted that the seventh day (1.4.14) was rather like the first (26.3.14). This is a common happening, so that there is something in the Australian schoolboy's belief that "a wet week-end means wet Saturdays for some time to come." To the east of the anti-cyclone the

[1] *Note.*—In the northern hemisphere winds are clockwise if viewed from above in an anti-cyclone and anti-clockwise in a cyclone.

winds are blowing from the south, and having come across the sea from colder latitudes, bring cool, cloudy weather and probably rain. As the anti-cyclone passes over any place, the winds gradually veer round and, after a few days, blow from the north; they are now coming from a warm dry region, and the weather is hot,

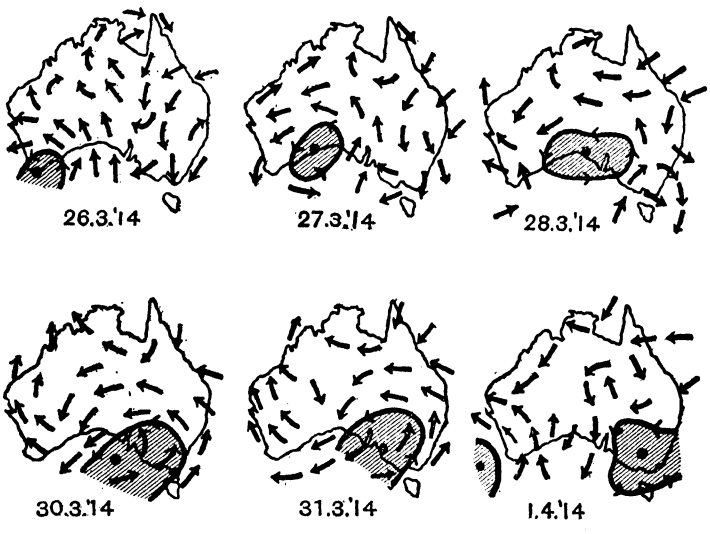

FIG. 56.—THE PASSAGE OF AN ANTICYCLONE.

dry and sunny. We thus see that while the greater differences between summer and winter are caused by differences in the elevation of the sun, the smaller daily weather changes are due to changes in the direction of the wind caused by the passage of cyclones and anti-cyclones.

Humidity.—But the direction of the wind is not climate, and rain affects our comfort only unfavourably. The factors of climate that are important to man's health are temperature and the humidity, or dampness, of the air and perhaps the strength of the wind.

The drier the air the more the moisture it can absorb. When the air at any given temperature contains as much moisture as it can hold, it is saturated, and water, in contact with it, will not evaporate.

If the air contains 80 per cent. of the moisture it could hold, it is very damp ; if it contains less than 50 per cent., it is dry. The humidity depends on the temperature as well as on the amount of moisture. A cubic foot of air at 32° F. would be very damp if it contained two grains ; it would be very dry if it contained two grains at a temperature of 70° F.

Great humidity during hot weather is harmful to health ; evaporation from the skin is checked, and one suffers a clammy perspiration ; a lazy feeling is induced. On the other hand, a fairly high humidity in winter, though unpleasant, is not so harmful to health. From these facts it follows that the hot damp climate of the lowlands of the north and north-east coasts of Australia, like that of other equatorial lands, is not so suitable for white people as that of the south.

When temperatures are being recorded, it is usual to note not only the " dry-bulb " or actual temperature, but also the " wet-bulb " temperature. The latter is given by a thermometer whose bulb is covered by a little gauze cover which dips into water and so is kept always damp. The water in this cover is continually evaporating ; in so doing it takes heat from the mercury in the bulb ; therefore, unless the air be saturated, the temperature of the wet bulb is always lower than that of the dry bulb, and the difference gives a measure of the relative humidity of the air.

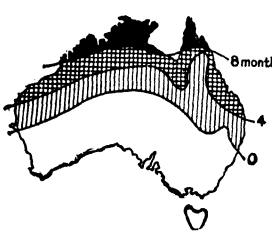

FIG. 57.—AUSTRALIA : WET-BULB TEMPERATURES OVER 70° F.

As the human body is really a kind of wet-bulb thermometer from which perspiration evaporates, the wet-bulb temperature gives a much truer representation

of what one feels than does the dry-bulb temperature. A hot climate may be much more bearable than a cooler one if it be drier, because perspiration is then encouraged and not checked. For this reason, in comparing climates with the idea of noting where men may live rather than where things may grow, it is probably better to use wet-bulb temperatures. Now a wet-bulb temperature of 70° F. is apt to be uncomfortable, and it should be noted that the far north of Australia has eight months, in the hottest part of the year, with a wet-bulb temperature over 70° F. and a considerable portion of the continent has four months.

Temperature.—With this general account of the Australian climates by way of an introduction, we may return to Northern Australia. Along the north coast temperature is high all the year round and the wet-bulb temperature is high for more than half; for several weeks, day after day, the thermometer rises to over 100° F.; farther inland the summer temperatures are even higher. Though there is little difference in temperature between the summer and winter halves of the year, there are two well-marked seasons, dependent on the monsoons.

In September and October the heat is most oppressive, and the monotony is broken only by thunderstorms which become more and more frequent and violent until November, when the wind changes round to the north-west and blows with great force. This is the summer monsoon which carries great banks of cloud, terrific squalls and deluges of rain to the coast-lands. The air is now saturated with moisture, and the hot humid conditions are unfavourable to white people. This kind of weather lasts for about five months, during which time about 5 feet of rain fall at *Darwin*. During January, the wettest month of the year, Darwin sometimes receives more rain than does Sydney during the whole of the year. In April the sea winds become weaker, and gradually the south-east monsoon sets in, bringing hot dry conditions which last through the winter months.

Vegetation.—In the wetter parts, near the coast, the heat and moisture give rise to luxuriant vegetation. On the low coast itself are extensive fringes of unhealthy mangrove swamps. "A weird, uncanny underworld; a vast shapeless vault whose roof was supported by gnarled and knotted trunks, carved with fantastic devices by the process of nature. Slender flying buttresses vaulted away from the trunks in a long series of elliptical arches. . . . The atmosphere was stifling and permeated with a hot miasmic vapour. Nothing was visible, no vista, no perspective, only knotted and twisted trunks and a tangle of boughs and branches and roots, of roots and branches and boughs: above, a roof of leaden leaves; underfoot, a slushy, noisome ooze of decaying leaves, roots, shells and mud."[1]

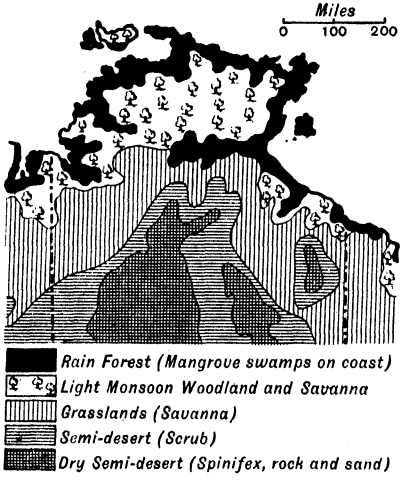

FIG. 58.—NORTH AUSTRALIA: VEGETATION.

Inland the vegetation changes. At first there is a zone of light monsoon woodlands with, here and there, in the wetter areas, patches of dense forest. Behind this is a hilly belt covered with woods containing different kinds of acacia and eucalyptus which gradually thins out into a savanna, or park-like country, of tall tuft-grass dotted with thickets of acacia and brigalow thornwood.

Aborigines.—Northern Australia, including Central Australia, covers half a million square miles. This is one of the least-known parts of the continent, and, in 1933, contained only 4,138 white people. There were, however, in addition 19,424 aborigines, a very primitive people,

[1] Alfred Searcy, *The Australian Tropics.*

belonging to a race entirely different from any of those inhabiting either the East Indies or the Pacific Isles. How they reached Australia or where they came from is not certainly known. They probably arrived, at a far-distant date, when Australia was joined to Asia by land. As a result of the situation of Australia with reference to other land masses, they have been cut off for many centuries from the rest of the world, and in this isolated land, out of touch with other peoples and ideas, they have remained much as they were thousands of years ago.

They are dark brown in colour and often tall and well-made. They have high cheek-bones, broad noses, bright eyes, fine teeth, curly pitch-black hair and big beards. Before the arrival of the white man there were no domestic milk-giving animals and no fruit or food plants of any great value. The " blackfellows " were therefore compelled to live a wandering life in search of food. They eat snakes, lizards, grubs, cones of pine-trees and almost anything else that their strong teeth will enable them to chew. Their ordinary diet is chiefly a few roots, berries, and shellfish. Some of the wilder tribes have been cannibals, but this may be due as much to ancient custom and tradition as to want of food.

They wear little clothing, sometimes none at all, but grease their limbs with fish oil, though, in the south, where it is a little cooler, cloaks and aprons of fur are to be seen, and in the neighbourhood of white settlements they wear cast-off clothing of white men and women.

In the dry weather they live entirely in the open air ; in the wet season, in some parts of the country, they build slight huts which are little more than a few boughs covered with strips of bark and perhaps daubed over with clay. They make shelters against the wind of branches arranged as they have seen the wind arrange the branches of trees when it is strongly blowing.

The women are treated as beasts of burden, and are old by the time they are thirty. The aborigines do not weave cloth, make pottery, build outrigger canoes or

use bows and arrows; their weapons and implements are of wood, stone or bone.

They have no religion, but are very superstitious. Some of them believe that white men are the ghosts of dead black ones; they expect to come to life again, "jump up all same white fellow," and lead an idle happy existence ever afterwards. A good number of years ago a white man named Buckley, who had escaped from jail, wandered about till he was nearly starved. One day, from the grave of a native, he drew a spear with which to hunt, but fell with it, weak and fainting, on the grave. When he woke, native women were singing and dancing round him thinking he was the dead man "come up white fellow." They gave him food and made him a kind of chief; it was thirty-three years before he managed to escape and go back to his own people.

Life in the Stone Age.—It is clear that we have here a people whose civilisation is rather primitive; they cannot, for instance, count beyond five. They are, in fact, living in the Stone Age, as our ancestors were ten thousand years ago, and if we remember that they never had the luck to discover the use of metals and could therefore know nothing of the arts and crafts that come with their use, we may perhaps think that, on the whole, they have not done so badly. They certainly have learned to fit their ways of living to the place in which they live and can do many things that no white man can do. They are clever hunters and fishers, and possess marvellous skill with the boomerang. They have exceedingly keen sight, and can follow a trail a white man could not even begin to see. Some of them have been employed as shepherds, but as they have never been used to steady work they almost always leave their flocks after a short time and take to the bush. In Queensland they have been employed as "trackers" to discover stolen cattle and escaped criminals, but many of them are so cruel and bloodthirsty that their employment in these pursuits needs careful watching.

These "blackfellows" are far more backward than

any of the people we have studied in this book, chiefly because Nature was so unkind to them at the start. They could not raise cattle, for there were none to tame or raise ; they could not learn to cultivate the soil, for there were no suitable plants to cultivate ; they could not build houses or own much property because they were always on the move. They are much more backward than are the sea peoples of the Pacific, and resemble, more than any of the other peoples we have seen, some of the tribes of South America or those who live in the mountainous parts of the larger East Indian islands.

Like many other primitive people who have come into touch with white races, their numbers are decreasing. Though they appear hardy enough in their natural state, they seem, as soon as they make contact with civilisation, to fall victims to imported diseases. The last of the Tasmanian aborigines died in 1876 and it is possible that some day all the Australian aborigines will also be extinct. There are a few hundreds in Victoria, perhaps a few more in New South Wales and South Australia, but the greater number of them roam about in Western Australia, Queensland and North Australia.

Had Australia been discovered and settled earlier than it was, it is unlikely that any of the aborigines would have remained to our time. Fortunately for them, the earliest white traders and explorers saw mainly the west and north coasts where there was nothing to buy and no one to whom they could sell anything. Moreover, Australia lay off the main trade routes, and was not as easily reached by boats as the smaller islands of the Pacific. For centuries the only regular visitors, and they did not stay to settle, were Malays. Year by year they came in their peculiar boats, *proas*, to collect pearl, pearl shell and trepang. The last, a kind of big sea slug, was obtained by diving for it in shallow water. The Malays dried it in the sun, waited for the south-east monsoon and then, with favouring breezes, set sail for China, where trepang is considered a luxury.

Cattle.—When Australia was known to be a goodly

land, many white settlers arrived, but so far they have not looked very kindly upon the northern part of the continent, though it is not without its attractions. Mining for tin and gold is carried on, but the chief wealth of the region is cattle. North Australia has not far from a million head of cattle ; this is an average of 240 animals per person, though less than two per square mile. There is plenty of room for the growth of the cattle-rearing industry in these grasslands that produce the biggest bullocks in Australia.

The cattle, raised for beef and not for milk, roam at large over great tracks of savana till the time comes to round them up and march them to the meat works at Darwin or elsewhere, where they are slaughtered. The large cattle stations are situated chiefly in the country round the Victorian River and on the Barkly Tableland, where the climate and vegetation resemble those of the cattle lands of Brazil.

Up to the present the industry has been hampered by the difficulty of taking the animals across a waterless country to the coast, the frequency of severe droughts and the ravages of ticks. These difficulties, however, are gradually being overcome ; deep wells are being bored and stores of fodder provided along definite stock routes, while the dipping of the beasts in certain solutions plays havoc with the ticks. At the present time there are about as many cattle in the Northern Territory as there are in Western Australia and three times as many as there are in South Australia.

Little Agriculture.—Agriculture, so far, has not made much progress : only about 1,000 acres are under cultivation. Coco-nuts and pea-nuts are grown to a small extent, but the chief crop and the one which might become of considerable importance in the future, is cotton. In 1925, North Australia produced 27,000 lb. of cotton ; the quantity is as nothing compared with 18 million lb. in Queensland, but scientific experiments on small patches have proved that the country is suitable for cotton, and there is no other crop except wheat in

which Britain has greater interest. More settlers would put a greater area under cultivation, and Australia has decided that these settlers must be white.

It is not easy, however, to persuade white men to go to the Northern Territory so long as they can make a good living by working in those parts of the continent

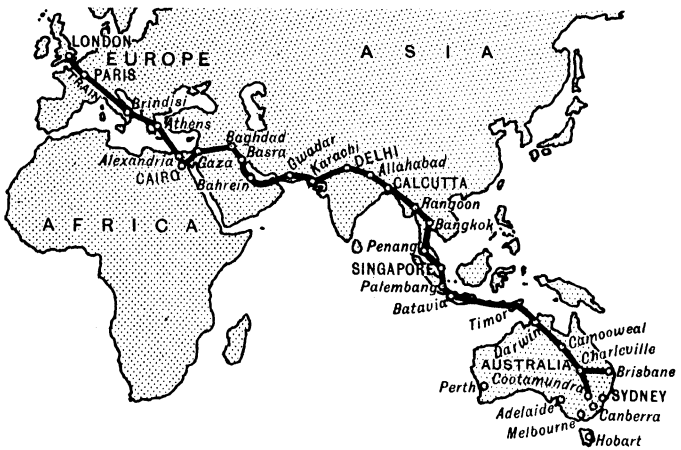

FIG. 59.—AIR ROUTES: EUROPE TO AUSTRALIA.

where the climate is more enjoyable and the land equally productive. If these happier sections were full, more people would certainly go north, but except for the cities the continent is very thinly populated.

Approach from the North.—One thing may be said about North Australia, and that is that, as it is the part of the continent nearest to the other lands of the Old World, it is the natural point of landing by air from the north and north-west. *Darwin* is the spot at which aeroplanes land, and with greater traffic by air cannot but increase in importance. Darwin is to be connected by rail via *Alice Springs* with the south. North Australia, being the side nearest to Asia, is naturally open to the Chinese and the Japanese, and from time to time, a certain number of Asiatics have entered this part of

Australia. We have seen how Malays came for pearls and sea slugs; the pearl fisheries still employ small numbers of Malays, Chinese, Javanese and Japanese. There are also a small number of Chinese and Japanese settlers who work in the gold mines or who were employed in making the railway from Darwin to Port Creek. In 1888 there were 4,000 Chinese in North Australia, but the number is now not one-fifth of that number. There is no doubt, however, that if it were not dominated by the white man, North Australia would be full of yellow ones.

CHAPTER X

WESTERN AUSTRALIA

It has been difficult, so far, for reasons already given, to persuade white people to go to live in large numbers in North Australia. Let us now see what has happened in parts that are known to be suitable for white settlement. We will first consider Western Australia, which may be approached from Europe, and was, in fact, one of the sections of the continent earliest reached by Europeans. It was seen by Dirk Hartog, Houtman, Pelsart and others long before anything was truly known about the east. It might have been settled by people from India or Africa, but, as a matter of fact, no settlers came from either of these lands, just as none came from China to the north. It was settled by white people, but—and this seems a little surprising—the first settlement was not made until just over one hundred years ago (January 21, 1827), and, at the present time, there are only about one-third of a million people scattered over its wide area of a million square miles. It is the least densely peopled of all the States of the Commonwealth, and yet, as we have seen above, it is not difficult to reach. Is there anything in the geography of the State that helps to explain this fact ?

Relief.—In previous chapters we have shown that the relief of a country may have something to do with the smallness of the number of people living in it. Consider the relief of Australia as a whole. In the southern half of the world there are four huge plateaus—Brazil, the southern part of South Africa, Southern India and

Western Australia. At a very far distant time these were all part of an immense continent which geographers have called Gondwanaland. Around this rigid mass of ancient rock, the earth's crust was folded to form a number of great mountain ranges whose position is shown in Fig. 60. This continent no longer exists as a whole ; but some portions may now lie beneath

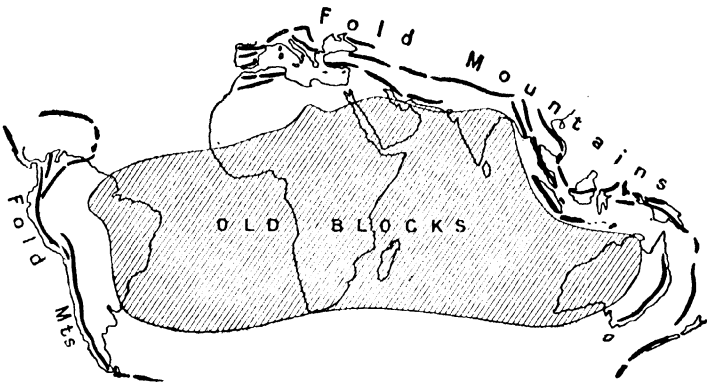

FIG. 60.—GONDWANALAND.

the Indian and South Atlantic Oceans, while the four tablelands already mentioned have remained up aloft and dry for long ages. What remains of one of these blocks occupies the western half of Australia.

In the east of the continent is the mountain fringe known as the *Great Dividing Range*, backed by wide lowlands which are divided into two big basins by the *Flinders* and *Stokes* Ranges. The eastern basin is drained by the tributaries of the Murray and the Darling, while the western one is an area of inland drainage.

It will thus be seen that the three main features of the relief of Australia are :

(i) The Eastern Highlands.
(ii) The Central Plain.
(iii) The Western Plateau.

The interior of Western Australia is an undulating plateau without any striking high mountains, but with many separate ranges of rather low hills. Whatever

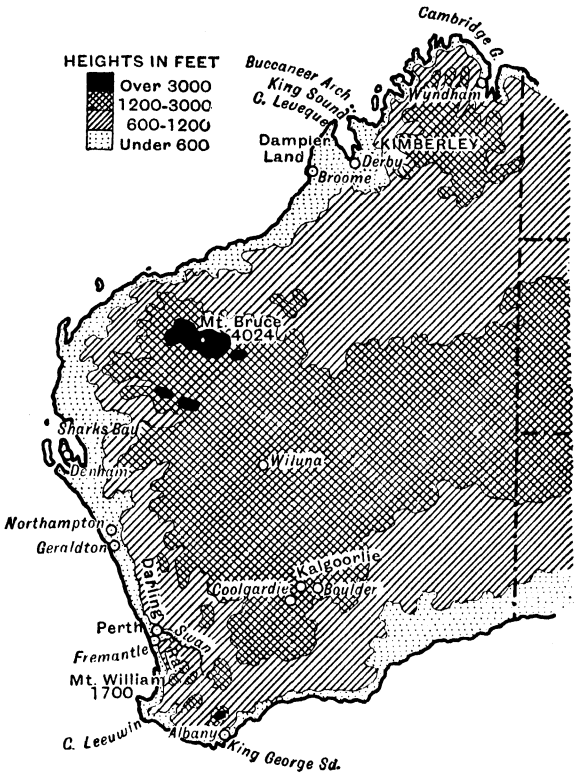

FIG. 61.—THE RELIEF OF WESTERN AUSTRALIA.

high mountains may have existed in the lost centuries of long ago have, during countless ages, been worn to lower levels by the action of wind and water. In the eastern part of the plateau, not in West but in Central Australia, there are, however, two areas of greater height, the *MacDonnell Range* and the *Musgrave Mountains*, which reach altitudes of 5,000 feet.

In the far north, in the *Kimberley* district, the rock is of igneous formation and the surface is rugged, but elsewhere most of the plateau is of sandstone. In many places this has been reduced to sand by the weather and blown into parallel lines of sand dunes " running with the regularity of the drills in a ploughed field. . . . A vast howling wilderness of high, spinifex-clad ridges of red sand, so close together that in a day's march we crossed from 60 to 80 ridges so steep that often the camels had to crest them on their knees and so barren and destitute of vegetation (saving spinifex) that one marvels how even camels could pick up a living. I estimate their average vertical height from trough to crest at 50 to 60 feet. Some were mere rises, whilst others reached a height of considerably over 100 feet. Sometimes the ridges would be a quarter of a mile apart, and sometimes ridge succeeded ridge like waves of the sea." [1]

The highest part of the plateau is in the north-west, where Mount Bruce reaches 4,024 feet, and there is a considerable area over 3,000 feet. In the south-west corner the plateau rises steeply from the narrow coastal plain. One of its edges, or *escarpments*, the *Stirling Range*, reaches an altitude of 3,640 feet in Bluff Knoll, a peak which forms a striking landmark on account of its height and isolation. The western edge, known as the *Darling Range*, runs almost parallel to the west coast, about 20 miles from the sea, from Geographe Bay to the north of the Murchison River, a distance of over 400 miles. This escarpment never rises to more than 1,700 feet, and owing to the many gaps carved by rivers in its rim, offers no barriers to communication with the interior.

The west coast, north of *Broome*, is deeply indented by openings that are separated by mountainous bluffs, while farther south, except round Cape Leeuwin, there are long, low-lying stretches of sandy beach and a coast plain of varying widths. Along the shores of the *Great Australian Bight* a steep limestone escarpment

[1] Hon. D. Carnegie, *Spinifex and Sand.*

forms an unbroken and harbourless coast for hundreds of miles.

Climate.—As the surface of Western Australia is of no great height and there is no mountain barrier to prevent movement inland from the sea, it is clear that it is not the relief that accounts for the small population.

Let us look at the climate. In the last chapter we

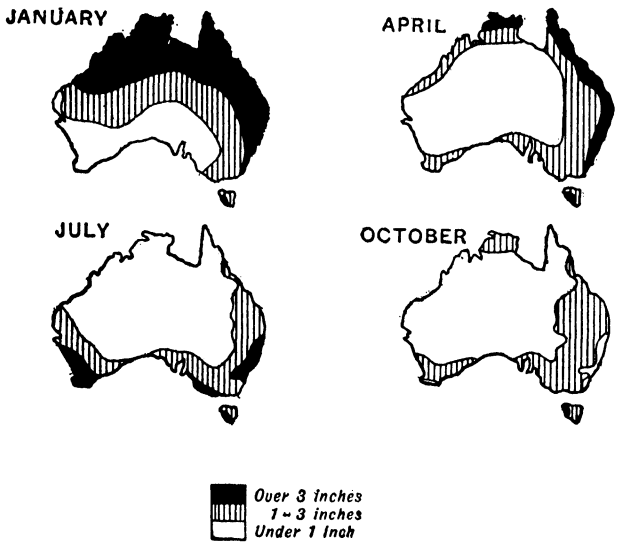

FIG. 62.—THE RAINFALL OF AUSTRALIA.

pointed out that there were five climatic regions in Australia : three of them occur in Western Australia.

1. *The North.*—Here the climate is similar to that of Northern Australia, the wet season coming in the summer, when the monsoon winds from the sea drop their moisture over the land. Sometimes this section is swept by cyclones that bring torrents of rain. On one occasion, one of these " willy-willies," as they are called, deposited on the Roebuck Plains, in less than two days, over a yard of rain, more than half the usual average for a whole

year. Fortunately, happenings of this kind are not very common.

The heat is great enough to make white people give up their tweed suits and European clothes for white cotton or the more useful khaki drill, and build white-painted wooden bungalows with large verandahs to keep out the sun.

2. *The Interior.*—Here, in Western Australia as in the centre, there is never enough rain: *Lake Eyre* in South Australia, which is coloured blue on the maps, as if it were full of water, is often 4,000 square miles of whitish, barren flats and salt swamps. "Lake Eyre," says Warburton, "was dry—terrific in its death-like stillness, and the vast expanse of its unbroken sterility. The weary wanderer who, when in want of water, should unexpectedly reach its shores, might turn away with a shudder from a scene which shuts out all hope." After rains the rivers draining into the depression contain a large amount of water, but in the grip of a severe drought they become nothing but a line of salty, stagnant pools.

So far as temperature is concerned, the winter is the pleasanter season: in summer, especially towards the north, the heat is almost unbearable. Sturt says [1] the ground is so hot that matches dropped on it burst into flame. "The mean shade temperature for the months of December, January and February had been 101°, 104° and 101° F. respectively. Under its influence every screw in our boxes had been drawn, and the horn handles of our instruments, as well as our combs, were split into fine laminæ. The lead dropped out of our pencils; our hair, as well as the wool on the sheep, ceased to grow, and our nails had become as brittle as glass. The bran in which our bacon had been packed was perfectly saturated, and weighed almost as heavy as the meat; we were obliged to bury our wax candles; and we found it difficult to write or draw, so rapidly did the fluid dry in our pens and brushes. . . .

[1] C. Sturt, *Central Australia.*

"At noon I took a thermometer, graduated to 127° F., out of my box, and observed that the mercury was up to 125°. Thinking that it had been unduly influenced, I put it in the fork of a tree, sheltered alike from the wind and the sun. I went to examine it about an hour afterwards, when I found that the mercury had risen to the top of the instrument, and that its further

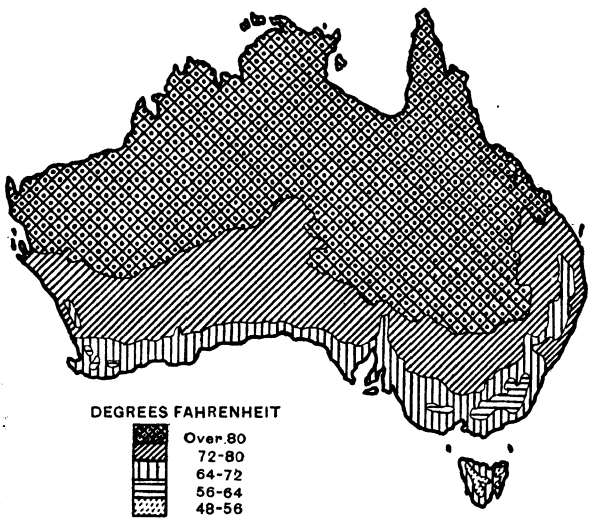

FIG. 63.—AUSTRALIA: TEMPERATURE IN SUMMER.

expansion had burst the bulb, a circumstance that I believe no traveller has ever before had to record."

3. *The South-west.*—Here rain falls in winter, when the wind belts have moved far enough north to bring this corner into the track of the westerlies. In April dense rain clouds begin to drift across the country and heavy showers sometimes occur; this wet season sometimes lasts until October. During this period Perth receives about 30 inches of rain, but as much of this falls in heavy showers, there is, even in winter, a large amount of sunshine. The summer season begins in November, when there follow week after week of blue skies and

bright sunshine. The temperature is often high, but on account of the dryness of the air the heat is seldom very trying.

It would seem that it is the climate and not the relief that helps to explain why there are so few people in Western Australia and why most of them live in the south-west and practically none in the centre. The north is rather too hot and damp and the centre too hot and dry. The effect of the climate is strengthened by the vegetation to which it gives rise.

Vegetation.—(1) In the north luxuriant plant growth is found in the wetter, and savana in the drier areas. The distance of this region from the more densely peopled parts of the continent, the sparse population and, at the same time, the abundance of grass make stock farming the chief industry, as in North Australia; the chief cattle stations are in the basin of the Fitzroy River.

During the dry season, when the grass has turned to standing hay and the other plants, for the time being, are scorched by the sun, fires sometimes occur that spread with the speed of a galloping horse. To stop their progress, wide tracks are kept free from vegetation, while at the larger stations are water-carts and stacks of staves to which are fastened canvas flaps that look like flags. A sentry on horseback is always on the lookout, and at the sight of smoke rising on any part of the station he rings an alarm bell. At once all hands rush to the scene of the fire; the canvas flaps are dipped in the water and the burning grass is beaten down. If the fire were not stopped at once it might spread for miles, destroying nearly all the stock, and leaving no pasture on which to feed any beasts that might escape.

Once a year the cattle are rounded up to brand the calves and select some of the fully grown animals for the meat works. On a large station, the herds, at the beginning of a round-up, may be far out of sight, but a good stockman knows where they are likely to be found. Under his direction a few riders set off from the home-

stead, taking with them a supply of food and camp kit in case it takes them several days to locate the herds. When the herds have been discovered, the herdsman points out the steer he wishes, and a rider gallops into the herd to-

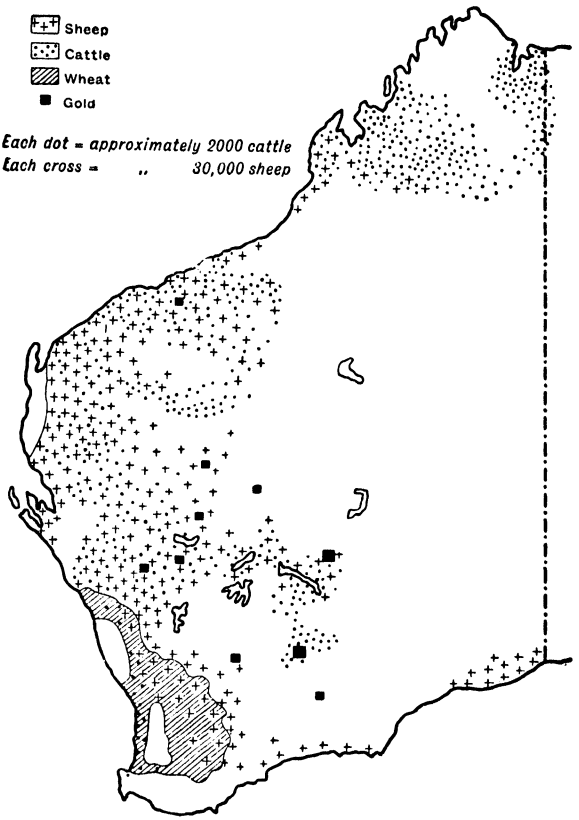

FIG. 64.—WESTERN AUSTRALIA: ECONOMIC.

wards the selected beast. By continuously cracking his twelve-foot whip he generally succeeds in driving the wanted animal away from its companions, but if the pistol-like reports are unheeded, the whip may strike the

hide with a force that is rather brutal. The selected animals, as they are removed from the herd, are kept together till the number is complete, when they are put in charge of a driver whose business it is to take the bellowing mob, perhaps a thousand strong, to the meat works at *Wyndham* on the coast.

Stock-raising depends on wide areas of grass for the support of animals, and is not an occupation that favours dense settlement.

(2) Where the climate is hot and dry, there is a kind of semi-desert ; very little of the area is true desert, for rain falls irregularly, though in small amounts, almost everywhere. The only plants which can exist are those that can prevent the loss of any moisture they contain ; some turn their thin edges instead of their flat sides to the sun ; some have thick leathery leaves ; some secrete oil, and some have long roots that go down deeply in search of moisture. To all the scanty, dwarf-growing, stunted vegetation the name " scrub " is given, a term that is also sometimes used for underwoods.

There are many types of scrub, but they are all to be found in areas with an annual rainfall of under 30 inches. The chief type in the south and south-west is the *mallee* scrub, a cheerless thicket of a kind of dwarf eucalyptus, where the plants grow so closely together as to be almost impenetrable. Other varieties include *mulga* scrub and *spinifex*.

Mulga scrub, composed of thorny acacias, is more feared by explorers than mallee scrub, as the short thorns tear the clothes and flesh of all those who try to penetrate its tangled growth.

Spinifex, the dreaded porcupine grass, has leaves that resemble knitting needles stuck in a big pin-cushion. The spines so wound the legs and feet of horses that the animals frequently have to be killed to put them out of their misery ; even the hard-mouthed camel cannot eat spinifex.

(3) The third climatic division, that of the south-west corner, offers us an entirely different scene, and it is here

that there is the densest, though still not a great, population. Between the coast and the 15-inch rainfall line, the land is forested with timber trees of great value. Along the escarpment of the Darling Range are tuart and red and white gum trees; east of the escarpment are forests of jarrah; east of the jarrah belt and even beyond the 15-inch rainfall line the country is well-wooded with forests of white gum and York gum, whose timber is used for pit props in the deep gold-mines round *Kalgoorlie*.

The most valuable of all the Western Australian trees is *jarrah*, a kind of eucalyptus. Jarrah is not found far inland, and yet direct sea breezes do not suit it; the best forests are 20–30 miles from the coast. The tree delights in an ironstone formation, and the rougher the site and the more barren of other vegetation, the better jarrah thrives. A good healthy specimen runs from 90 to 100 feet in height. The value of the tree depends on its hardness and durability. Jarrah is principally used for street paving, piles, jetties, bridges, boats, furniture and railway carriages, and it makes the best charcoal of any timber in the State.

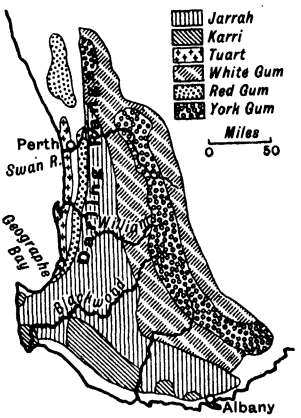

FIG. 65.—WESTERN AUSTRALIA: TIMBER.

The giant tree of Western Australia, another specimen of eucalyptus, is *karri*. This tree is not so well known as jarrah on account of the limited field of its growth and the difficulty of reaching it. The best forests lie between *Geographe Bay* and *Albany*. The trees are almost always of straight growth and tower skywards for great heights without the semblance of a branch; they look like a mass of upright candles. Karri wood is used for the same purposes as jarrah, but is preferable for wood

paving as its surface becomes less slippery under heavy traffic.

Unfortunately the removal of the timber from the forests is not aided, as it is in Canada, by snow-covered ground or numerous rapid rivers ; the fallen giants are therefore sawn up into movable lengths in the forest itself. The massive logs are hung under the axles of huge wheels and drawn to the nearest railway depot by teams of a dozen or more oxen.

Forests, like stock-raising districts, are naturally never very thickly populated, and we might offer as another explanation of the sparse population of West Australia the nature of the vegetation—tropical growth and savana in the north, an arid region in the centre and the forests in the south.

Minerals.—It was not the vegetation that first attracted settlers in any number but, as in the case of California—gold. Gold, which had long been mined in the east of Australia, was not discovered in the west until 1882, when the deposits at *Kimberley* in the north-west were found ; these were soon exhausted. Five years later much richer fields were being worked around Southern Cross in the south-west. While this, the Yilgarn Goldfield, was at the height of its prosperity, two gold-seekers, Bayley and Ford, pushed out into the scrub and to the east, and, by a very lucky accident camped on ground which was more than usually rich in gold. Within a few hours, on the first evening of their discovery, they hacked out about 40 lb. of pure metal.

When the news of this wonderful hoard reached Southern Cross, that mining centre was quickly deserted and soon, from the whole of Australia and from many foreign countries, people were flocking to the new fields of promise, now known as *Coolgardie*. Across 350 miles of rough track from Perth there was one long unending march of gold-seekers, merchants, carriers and labourers, some on horseback, some in carts and some on foot pushing all their belongings before them in wheel-

barrows. In a very short time a strange collection of shacks made of galvanised iron, canvas, packing cases and brushwood, marked the site of the camp. While this camp was being rapidly converted into a well-planned city of brick and stone, another and more important discovery brought to light the more valuable riches of Kalgoorlie.

One of the greatest difficulties facing the miner in these arid regions was the lack of water. The small lakes near the goldfields were usually dry stretches of salt, and the water brought to the surface by the sinking of deep wells was too brackish to drink. Water was carried by rail from Perth, but was costly. To overcome the difficulty the Government spent £2,500,000 in creating pumping stations and laying a pipe-line from the Darling Range for a distance of nearly 400 miles. This now supplies water to all the cities of this inland mining area and is also used for irrigation.

At first gold was obtained by washing or winnowing the fine gravels and sands that had been formed from gold-bearing quartz rocks by the rain and the wind, and now lay in the dried-up beds of the streams. When the surface deposits were exhausted, it became necessary to sink mines and to use scientific methods of mining. To-day the shafts often have to descend to great depths. The quartz blocks are crushed by machinery, and the metal is extracted by chemical methods. Modern gold-mining is a scientific and expensive business. As the mines became deeper, the output became slower and the production of gold in Western Australia declined very considerably.

The discovery of gold in Australia brought to the continent thousands of enterprising men, many of whom, on leaving the diggings, settled down to earn their living by steady industry in some more permanent employment, so that the final results were more valuable to Australia than the worth of the gold itself.

Agriculture.—The most permanent of all employments is agriculture, for sun, rain and soil last for ever,

though the soil, as in China and Japan, may need a great deal of fertiliser to keep it productive. Now the south-west of Western Australia has plenty of cheap land, generally fertile soil, a climate similar to that of Chile and California, which is suitable for wheat and fruit, and, owing to wise government, easy transport by rail to several ports. Agriculture, not gold, is now the magnet that lures settlers to this favoured region, but though population has greatly increased, it has not yet attracted anything like the number of people who could make a comfortable living under its blue and sunny skies.

Most of the land opened up near the coast has so far been given over to dairy farming and to the growing of oats and wheat for the farmer's own needs. Cattle, pigs and poultry are also reared, but the most important product of the coast lands is butter.

Behind the dairy farms is a drier belt of country suitable for wheat. This belt, formerly covered with open forests of York gum, lies between the 10-inch and 20-inch rainfall lines, and stretches from *Geraldton* on the west coast to Albany and *Esperance* on the south. At the beginning of the century this vast region produced only three-quarters of a million bushels of wheat; during the last thirty years the yield has increased thirty-fold, but there is still plenty of room for wheat farmers.

The wheat farmers usually work upon the following system: in the first year wheat is grown; in the second sheep are grazed; during the third the land is ploughed and left fallow to conserve sufficient moisture for the growing of another wheat crop. The seed is sown early in April before the heavy winter rains; it germinates rapidly during the warm wet weather of May. The wheat is fully grown by the end of October: the ears ripen during the dry, hot, sunny months of November, December and January.

On account of the sparse population, which means shortage of labour, all kinds of machinery are used. The stump-jump plough cuts many furrows, rises when

it strikes a stump, and at once falls into position again. The combined seed drill puts seed and fertiliser into the ground at the same time. The harvester strips, threshes, winnows and bags the grain, and leaves the bags standing in rows in the fields ready to be carried to the railway. Throughout the wheat belt the Midland Company's railway forms a fairly close network that conveys the grain to the ports of Geraldton, *Fremantle*, Albany and Esperance.

Towns.—Stock-raising and farming do not give rise to large cities except as markets ; mines, ports and manufacturing towns are the kinds of places that collect crowds. In Western Australia, except for the mining centres, all the more important towns are on or near the coast, approachable by sea from the west. Only one of them, however, is really a large city.

There is a very small settlement on the north-west coast, *Broome*, that is of some interest because, unlike all other Australian towns, it has more yellow people than white. Broome is the centre of a fishing that supplies more than half the world's demand for pearls and pearl shell. White men, however, will not undertake the rather poorly paid, dangerous work of diving for pearls, and the industry has to employ Chinese, Javanese, Malays and Japanese or go out of business. Here, as in the far north, a certain amount of non-white labour is employed, but in each case the number of coloured workers is small.

The southern coast has one good harbour, King George Sound, upon which stands Albany (population in 1933, 5,000). At one time the great liners used to touch here, but since the harbour at Fremantle was deepened, the trade of Albany has declined.

On the west, the part of Australia first reached from Britain is *Fremantle* (population in 1933, 32,000), a port that suffers from the fact that it faces the westerly winds of winter and lies in the track of a strong current that flows north-eastwards round Cape Leeuwin. But it is the port first reached by liners from the west, and it

stands at the mouth of the Swan River, whose valley leads to the gold-fields, upon which a considerable part of the population of Western Australia lives.

Adjoining Fremantle, and in this same valley in the most suitable area for white settlement in the south-west, is *Perth*, the capital, and much the largest city (population, with Fremantle, now about 200,000). It is in a situation of great natural beauty and contains a number of fine public buildings.

It is obvious that this western section of Australia with its pearls and its gold, its wheat and its forests, its grasslands and its fruit is an interesting part of the continent, but interesting as it is, it is not the most important. It is the east of Australia, not the west, that has been the scene of the greatest developments and to the reasons for this we must now turn our attention.

CHAPTER XI

QUEENSLAND AND NEW SOUTH WALES

We saw, in the last chapter, that in Western Australia there is a sparse population of gold miners, dairy farmers, wheat farmers and stock raisers, and that the densest population is in the south-west, where the climate is most suitable for white people. In this chapter we pass to the opposite side of the continent to see what are the conditions in the east.

Coral Reefs and Islands.—The eastern margin forms part of the belt of folded mountains that encircles the Pacific and fits into its place in the world order of things as one piece of a jig-saw puzzle fits into its place to complete the picture. Off the coast of Queensland are lines of islands, the remains of old coastal ranges left standing above the water after the sinking of the land, while farther out to sea is the *Great Barrier Reef*, a ridge of coral 1,200 miles long and varying from 30 to 75 miles in width. This reef, the finest stretch of coral rock in the world, protects an inner lane of calm water through which steamers may pass on their way to the ports of Asia.

Relief.—The highland region, the Eastern Highlands, generally known as the *Great Dividing Range* (but with local names in different parts), rises steeply from a narrow coastal plain, well supplied with water and well timbered; it runs through the entire continent from north to south, a distance of over 2,000 miles, but turns westwards through Victoria. It is, on the whole, a belt of old folded mountains which was once worn

down to a much lower level and then again upheaved to form a tangle of uplands.

In the *York Peninsula*, in Queensland, the highlands lie near the sea, and are drained by short rapid rivers to the east and longer steadier ones to the Gulf of Carpentaria. Farther south they become higher and broaden out into a number of ranges which enclose the basins of the *Burdekin* and *Fitzroy* Rivers.

Near the boundary of New South Wales they suddenly narrow and change direction, but increase greatly in height. In this State the Great Dividing Range consists of a number of separate blocks :

1. The *New England* plateau extends for 250 miles from the Queensland border to the basin of the *Hunter River*; the Nandewar Range, a volcanic ridge, pushes out towards the west, while the seaward side is cut up by valleys through which foaming streams, e.g. the Clarence, Macleay and Manning, plunge down to a very narrow plain along the coast. The waterfalls on these rivers may some day be used for the production of electricity.

2. To the south of the New England plateau the *Mount Royal* and *Liverpool* ranges slope steeply down to a depression cut, by the Hunter River, right into the heart of the cordillera ; this offers an easy route to the interior. A railway from *Newcastle* passes through this depression, follows the Hunter Valley for some distance and crosses the Liverpool range by a rather low pass. A more direct route, the easiest route to the west, however, is along the valley of a tributary of the Hunter, past the town of Cassilis, through the *Cassilis Gate*.

3. South of the depression is the *Blue Mountains* plateau of sedimentary rocks, where the surface is much divided by a number of deeply-cut river valleys. "Between these ranges lie yawning chasms, deep winding gorges and frightful precipices. Narrow, gloomy and profound, these stupendous rents into the bosom of the earth are enclosed between gigantic walls of sandstone rock, sometimes receding from, sometimes fright-

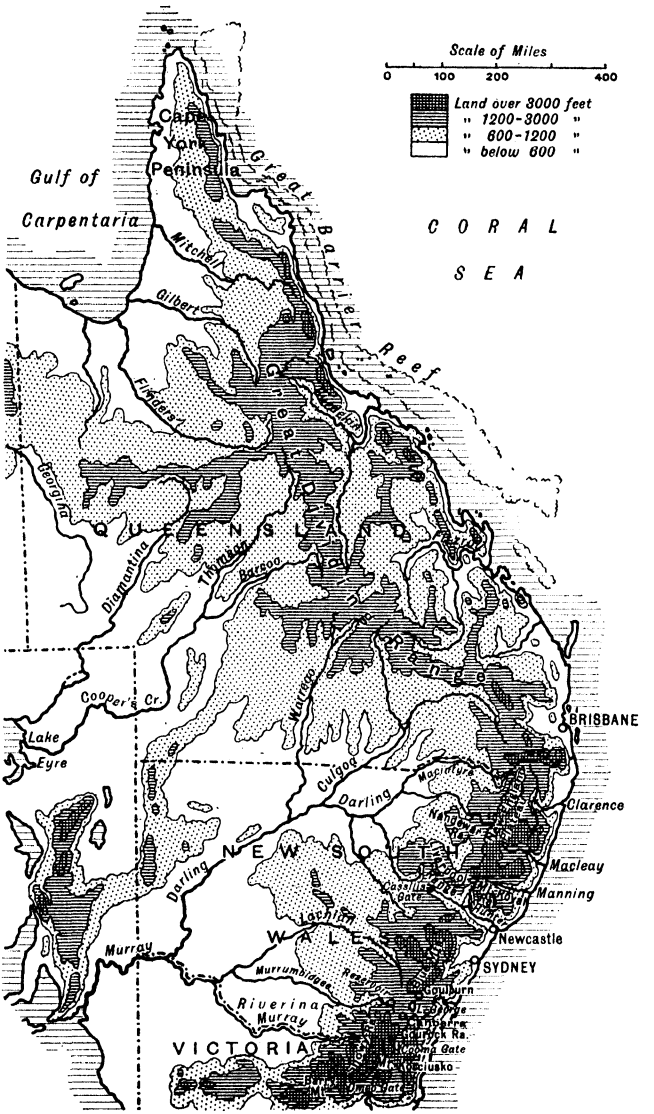

FIG. 66.—QUEENSLAND AND NEW SOUTH WALES: RELIEF.

fully over-hanging, the dark bed of the ravine and its black silent eddies, or its foaming torrents of water. Everywhere the descent into the deep recess is full of danger and the issue almost impracticable." [1]

On account of its steep ascent, its rugged and deeply-cut surface and the barren desolate nature of the uplands, the Blue Mountain plateau has bee a great barrier to the westward movement of people from the coastlands of New South Wales; there is no easy crossing. The Southern Railway from Sydney passes to the south of it, through the town of Goulburn, and crosses the cordillera by a slight depression, *Lake George Gate*, in which lies Lake George, the most elevated lake on the continent.

4. South of Lake George are three main ranges separated by valleys that run north and south. The most easterly is the *Gourock* range; this is separated by the *Cooma Gate* from the higher and more extensive highland known as the *Snowy Range*. In this high granitic region is Mount Kosciusko, the highest mountain in Australia, upon whose slopes, in sheltered spots, snow may remain the whole year round. Here too is the source of the Murrumbidgee. Where this river passes through a narrow gorge at Burrinjuck a dam has been built to convert the upper part of the river into a great reservoir capable of storing 20 square miles of water.

Separated from the Snowy Range by the *Omeo Gate* is the *Barry Mount* block, which, however, lies completely in the State of Victoria.

On the western side of the Great Dividing Range the land slopes gently down to the great plains that cover large parts of Queensland, New South Wales, Victoria and South Australia. The Diamantina, Thomson, Barcoo and other rivers of Central Queensland that flow across the plain become smaller and smaller the farther they leave the mountains behind, and for many weeks in any year dry up long before they reach the salt swamps of Lake Eyre. The hill streams of New South Wales, on

[1] P. E. de Strezelecki, *Physical Description of New South Wales.*

the contrary, unite to form the *Darling*, *Murrumbidgee*, *Murray* system that flows to the south-west across the wide *Riverina* lowlands or enters the sea in South Australia.

Climate.—Over such a wide and lengthy tract of country as that covered by Queensland and New South Wales, differences of climate are naturally to be expected, but, on the whole, it may be said that the climates on the east side of Australia are more favourable to white settlement than those of either the north or the west. In the north of Queensland the temperature is, of course, always high—at times uncomfortably so. As one moves southwards towards and into New South Wales, the temperature falls, and periods of discomfort are shorter, though inland, owing to distance from the sea, the temperature is both higher in summer and lower in winter.

Rainfall, on which so much life depends, is rather kind to the east. The south-east trades, the chief winds at all seasons, blow from the sea, and bring to the coastal region enough rain for all purposes. To the Atherton Plateau, round Harvey Creek, in Queensland, they bring 14 feet, the heaviest rainfall in the continent. This is, perhaps, rather too much of a good thing ; elsewhere the winds deposit an average of 30 inches, a very satisfactory amount, and all the more valuable because it is certain and evenly distributed throughout the year.

By the time the east winds have crossed the Great Dividing Range they have dropped most of their moisture.

Settlement.—These different climates have had a great deal to do with the density of white settlement. The first comers "get the best seats." In the coastal regions of the north, the hot muggy atmosphere is not attractive so long as there is something pleasanter elsewhere and there are not, at present, many white people in this section.

The most densely peopled part of the east is the lowland around *Sydney*, where the rainfall is ample for the

farmer and the climate suitable for human effort. This was the part of Australia that was first settled, and to it the white population, for a long time, tended to be confined by the Great Dividing Range. After ways had been found across the mountains there was a steady movement into the great plains, where the chief occupations, the rearing of sheep and cattle, do not lead to close settlement. There is, then, in the east of Australia, a scattered pastoral population on the prairies, a sparse population on the plateaus of the Great Dividing Range and a few pockets of dense population on the coast.

Crops.—People who live mainly upon the land tend naturally to produce those things to which the climate gives the most encouragement. In Queensland there is a monsoon type of climate rather like that of Southern China and the south-east States of the United States of America. The crops most favoured by that type of climate are rice, tea, sugar, cotton, maize and green forage, but rice and tea, as already shown, need for their cultivation an abundance of cheap labour, and there is no cheap labour to be obtained in Australia. Hence, though there is plenty of good rice and tea land in Queensland, there is no cultivation of either rice or tea.

Sugar, however, is cultivated on the rich alluvial soils of the low-lying river basins near the coast; the chief centres are at *Bundaberg*, *Mackay* and *Cairns*. Though these lowlands receive a very heavy rainfall more is needed, and extra supplies of water are obtained to irrigate the land from rivers or deep wells. The yield of sugar per acre is good, but it is not easy for the Queensland planter, using white labour, to produce sugar as cheaply as the grower in Java who employs coloured labour.

Cotton also is grown, again with white and not coloured labour, and appears to be making great progress. In 1920, there were in the whole of Queensland only 72 acres producing cotton; within the next five years the acreage increased five-hundred-fold and the

crop was yielding 20 million lb. This is not a great amount compared with the tremendous output of the United States, but it is big enough to indicate that there is every possibility that Queensland may become one of the chief cotton-producing countries of the British Empire.

A large amount of maize, the fifth crop mentioned above, is also grown, but chiefly as green fodder for cattle.

Because New South Wales is so much farther south and therefore cooler, we may expect *wheat* to take the place that rice would take in the north, if it were grown ; wheat occupies 60 per cent. of the cultivated ground. As wheat requires, however, a dry summer to ripen the grain, it is on the dry west and not on the wet east of the Dividing Range that we must look for the largest areas of wheat cultivation. A fair amount of wheat is grown along the coastal plain, but the grain is poor, and the crop is used, like the maize in Queensland, as green fodder for cattle. The main wheat belt, west of the mountains between the 10-inch and 20-inch rainfall lines, lies on the slopes of the mountains and in the Riverina lowlands.

Stock-raising.—We have twice noted—in Queensland and in New South Wales—the growing of green food for cattle ; the production of such a crop points to stock-raising as an important occupation in each State. The dry grasslands also suggest the raising of sheep, one of the typical animals of dry regions. It is not surprising, under the conditions given, to learn that Queensland and New South Wales together have more sheep and cattle than all the rest of Australia and that cattle are the more numerous in the warmer, wetter Queensland, while sheep are the more numerous in the cooler, drier New South Wales.[1]

In the north cattle roam over great stations, similar

[1] The figures are:

	Queensland.	*N.S. Wales.*
Cattle . . .	6,400,000	3,000,000
Sheep . . .	16,000,000	37,000,000

to those in North and Western Australia, and are reared for beef. In the milder climate of New South Wales they are reared for dairy purposes. Milch cows form about one-third of the cattle of the latter State and live principally on the wet, well-grassed, narrow, coastal

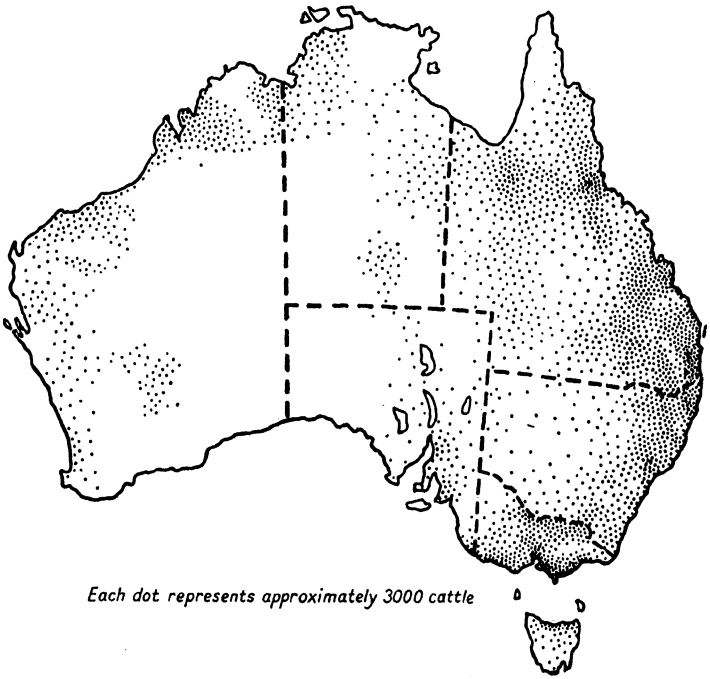

FIG. 67.—AUSTRALIA : CATTLE.

plain. Most of the milk is sent to central factories, where about 1 million cwt. of butter is annually manufactured. Much of this is exported to Britain, where, partly because it arrives during the northern winter when milk is rather scarce, it finds a ready sale.

Sheep.—On the drier plains the place of cattle is largely taken by sheep. Sheep farming, which has long

been Australia's most important industry, was founded in 1797, when good breeds of sheep, including a few Spanish merinos, were imported from Cape Colony. The dry Australian climate is so suitable to the merino that the Australian fleece is finer, more silky and more

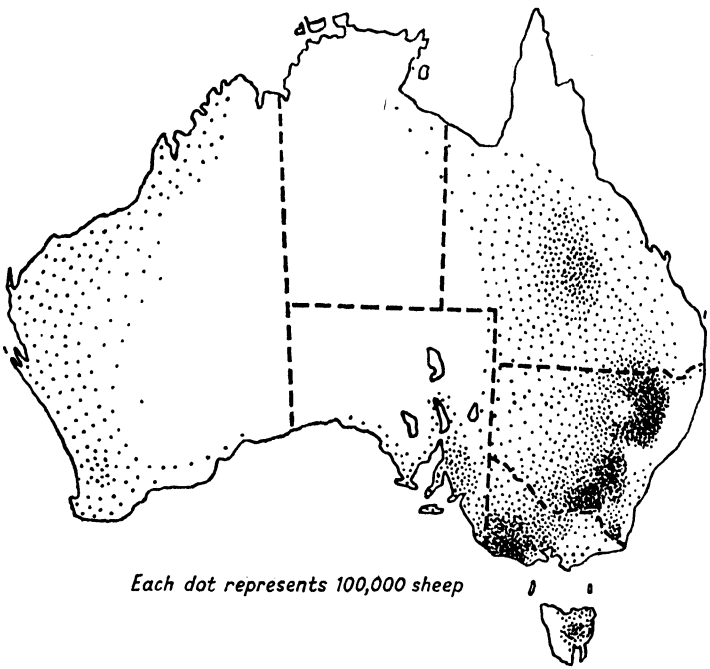

FIG. 68.—AUSTRALIA : SHEEP.

brilliant than that obtained in any other part of the world.

The great sheep farmers count their sheep by tens of thousands, and measure their sheep runs by many square miles. A large run may be 500 or even 1,000 square miles in extent and carry from 70,000 to 100,000 sheep. But more than half the flocks contain fewer than 5,000 sheep and the average is only 1,160.

The homestead is usually far from the coast, and may be 40 or 50 miles from that of the nearest neighbour. The house may be of wood and only one storey high, but in rich country, such as the western district of Victoria, it may be a large handsome mansion of brick or stone, lighted by electricity generated on the premises, and connected by telephone with neighbours and distant towns. As a rule the nearer the sheep station is to the coast, the smaller the run and the larger and more elaborate the farm-houses and buildings. Farther west the runs increase in size and the houses diminish in comfort.

Attached to the station are barracks for bachelors and for those who are learning the business of sheep farming or earning their living by farm work. Life for these young fellows is free but laborious. "Much of their time is passed amidst dust and grease, tar and oil, wool and skins. They must know how to handle and doctor sheep, how to wash, shear and slaughter them. They must be able to muster sheep, collecting them from the vast pastures on which they feed; to detect the weak ones at a glance, and to count the flock—no easy matter when there are thousands—with speed and accuracy. They must be able to live in the saddle. In the management of horses they must excel. Each must be capable of catching his own horse, which is probably never stabled, groomed or shod; and, above all, he must know how to retain his seat in spite of the many tricks the horse is sure to practise until the rider has proved his mastery."

The great drawbacks to sheep rearing are floods and drought. Nearly all the rivers in Australia suffer from too much water or too little. In dry weather they lose water rapidly under the blazing sun, and are either completely dried up or become mere chains of pools and ponds. As soon as the rain returns, floods follow, and the swollen torrents hurry seawards with great velocity, bearing trunks of huge trees and masses of rock. The only permanent streams of importance are the *Murray*

and some of its tributaries, and their volume varies very considerably with the rainfall.

The effect of drought may be illustrated by the fact that in 1902, during a long dry season, in New South Wales, 306,000 cattle, 36,000 horses and 15 million sheep were lost. In 1919 parts of New South Wales and a great deal of South and Central Australia had no rain for nearly a year; thousands of sheep and cattle perished, and horses were shot to save them from starvation. Railway trains carried water to some of the grazing districts or removed flocks and herds to places where water was obtainable, but despite all this the losses of the farmers amounted to £50,000,000.

Water Supply.—During recent years attempts have been made to store up water for the dry seasons. One of the greatest engineering works has been the building of a dam, at a cost of several millions, across the Murrumbidgee. Behind this dam the winter and spring flood water is held back till the summer, when it can be passed into canals upon whose banks it is expected there will one day be 6,000 farms.

Artesian wells are also bored, often to great depths, to tap the water-bearing strata that underlie a large part of the plains of Queensland and New South Wales. It is worth while to take all this trouble, for sheep, the foundation of the prosperity of the continent, are still the basis of its greatest industries. Millions of pounds' worth of wool are exported every year, and in no country has wool-raising reached a higher standard of perfection. The Australian output dominates the wool markets of the world, and buyers from England, France, America and Germany attend the

FIG. 69.—AUSTRALIA: ARTESIAN BASINS.

great auction sales at Melbourne, Sydney and Geelong.

Gold.—It was not, however, wool but gold that attracted the first crowd, and at one time gold mining was the chief industry. Gold is still mined at Mount Morgan in Queensland, and in a few other areas, but the output here, as elsewhere, has, until recently, been steadily growing less. Silver, lead and zinc are mined at Broken Hill in the extreme west of New South Wales.

Coal.—Coal, upon which other industries can be built, is found in many places along the eastern highlands, e.g. the Fitzroy basin, in Queensland, at Ipswich and Ashford near the boundary between Queensland and New South Wales and, most important of all, round about Sydney. The coal seams under Sydney occur in the form of a great saucer and come to the surface in a big horseshoe that passes through Bulli in the south, Lithgow in the west and Newcastle in the north. The Newcastle coal is largely exported or used in the local blast furnaces and steel-works. At Lithgow iron and copper are smelted for big engineering works that manufacture, amongst other things, small arms and munitions of war for the Commonwealth.

FIG. 70.—COAL IN NEW SOUTH WALES.

Such and other industries, together with large cities, are always to be found in lands with a modern civilisation. Manufactures on the whole are not of great importance at present in Australia, though they are rapidly increasing in value. But the abundance of raw materials —wool, meat, livestock, gold, coal, tin, lead, silver, copper, skins and tallow—gives rise to a large foreign trade, of which New South Wales does the greatest amount.

Cities.—In Australia, so long without railways, and where the chief road is still that by sea, the chief cities

are seaports. These are placed where good harbours attracted the attention of early settlers and where easy routes from the interior inland have made it possible to bring the products of the hinterland to the sea.

Thus *Rockhampton*, on the Fitzroy River, the second town and port in Queensland, has a fine natural harbour and a railway that crosses from the coast plain to the western plains and serves the rich farm land of Central Queensland. Rockhampton is also the port for the mining district of the Fitzroy basin.

The chief port (also the capital) of Queensland is *Brisbane*. It is on low land, is well watered and has delightful scenery and a good harbour, though the approach is interfered with by shifting sands. The climate, pleasant except during periods of extreme heat, and the presence of coal are perhaps most responsible for the fact that about one-third of the population of Queensland lives in this district. The trade of the port is in the wool and wheat of the Darling Downs and in coal.

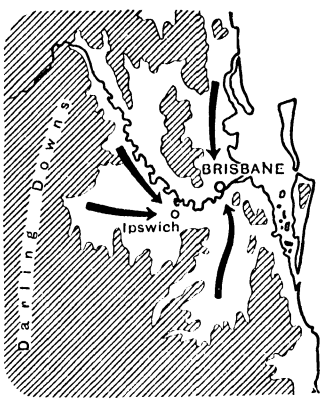

FIG. 71.—THE POSITION OF BRISBANE.

Newcastle, at the mouth of the Hunter, has easy access to the west along the valley of the Hunter and through the Cassilis Gate, but its harbour suffers from deposits of silt brought down by the river, and constant dredging is necessary. It is an important engineering and coal-mining centre, and exports coal, wool, meat and tallow.

Towards the centre of the coast of New South Wales is Port Jackson, one of the safest, largest, and most beautiful harbours in the world. Huge rocky headlands guard the entrance to a wide expanse of deep blue

water. The surrounding land is fertile, the climate is pleasant and coal is near. Here is *Sydney*, the capital of the State, so beautifully situated and so splendidly built that it is known as the "Queen of the South." From the wool grown on the extensive sheep pastures, woollen goods are made; cattle on the pastures supply

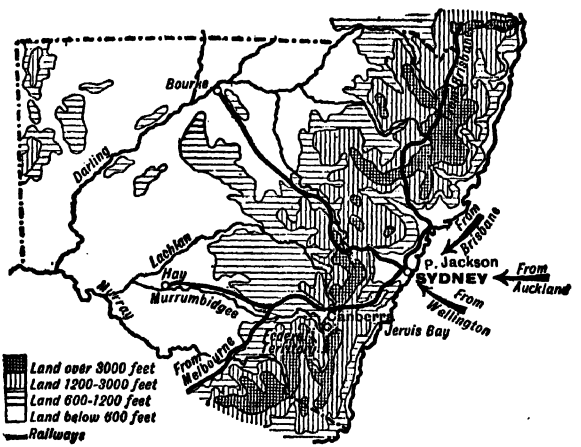

FIG. 72.—THE POSITION OF SYDNEY.

skin, and acacia trees provide bark for tanning—hence a leather and boot and shoe industry; cedarwood is used for furniture, and rosewood and tulipwood for cabinet making, and there are other valuable forest products.

The States.—Modern civilisation shows itself in other ways than in the presence of cities and of industries built on coal. Most of all does it show itself in the way in which it organises government. Australia, for instance, is divided into the following States: Queensland, New South Wales, Victoria, South Australia, Western Australia, and one territory, the Northern Territory, where there are too few people to make a State.

Most of the boundaries are just straight lines; the

continent was colonised late, at a time when people thought that latitude and longitude boundaries were convenient, and they remain, though, as in the case of the boundary between Victoria and South Australia, it is found that the boundary marked on the ground is 2 miles or more west of the meridian selected.

All the States possess a form of responsible government chosen by the people. Each has a parliament consisting of an upper house or Legislative Council and a lower house, the Legislative Assembly. Each Parliament has its own Prime Minister and a Cabinet, and the King is represented by a Governor.

In all this there is nothing that resembles the civilisation of the "blackfellow." These States are, however, in some ways like and in some unlike others about which we have heard. As in Canada and the United States, their boundaries are chiefly straight lines ; they have, like the various groups of States in North, Central and South America, a common language for the whole group. In Europe, on the other hand, boundaries tend to be real barriers that form lines of defence in case of war, and the different countries are occupied by people who speak different languages and have different customs.

An even greater evidence of the high state of civilisation is to be found in the federation of the separate States to form a Commonwealth, but this matter is dealt with in the next chapter.

CHAPTER XII

SOUTH-EAST AUSTRALIA

In the previous chapters we have seen that the population of Australia lives mainly on the coast, though there are some parts of the coast that are very thinly inhabited ; the interior of the continent, because it is so dry, is, at present, almost unoccupied. On both the east and west coasts, so far as we have studied them, we have found the population increasing in density from the warm north to the cooler, more bracing south. We have now to look at the south-east, that is, at Victoria, Tasmania and the eastern half of South Australia, to see how this section fits into the picture of the whole.

Relief.—In the first place, we may note that this section contains portions of the central lowlands, the eastern uplands and the western plateau which enters into this area in the Eyre's Peninsula, south of Lake Eyre.

The *eastern uplands* change direction on entering Victoria and run from east to west. Near the boundary of New South Wales they contain some of the highest peaks in the whole cordillera, no fewer than sixteen of them having an elevation of over 5,000 feet. Towards the west they gradually become lower until, just north of Melbourne, the rise is so slight that two railways from the capital to the Riverina are able to cross the ridge. West of this passage the upland consists of a number of low plateaus ending in the *Grampians* : beyond these the land slopes down to the plains of the Murray Basin.

The highlands, in the south of Victoria, are not so near to the coast as they are in Queensland and New

South Wales, and the coastal plain is therefore wider. Out of it rise two hilly areas, the *Otway Ranges* and the *Gippsland Hills*, which were once united to form a coastal range : these, however, have been divided by the sinking of the land and the formation of Port Phillip Bay.

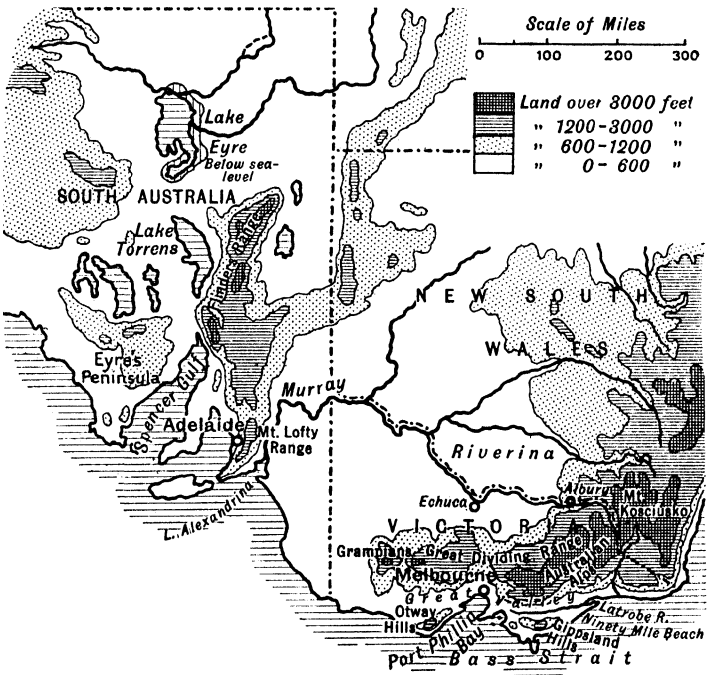

FIG. 73.—VICTORIA AND SOUTH AUSTRALIA : RELIEF.

Between these fragments of the old coast range and the edge of the cordillera is the strip of lowland, one of the most beautiful and prosperous parts of the continent, known as the *Great Valley* of Victoria. The rivers Mitchell, Thompson and Latrobe, which rise on the southern side of the Great Dividing Range, flow eastwards across this plain, and, after passing through a number of lakes and lagoons, reach the sea at the north-

cast end of Ninety Mile Beach, a long, low, narrow sand-bank that dams back their waters.

The eastern cordillera is continued in Tasmania, though the connection has been broken by the sinking of the land and the formation of *Bass Strait*; if the floor of this strait were lifted but 300 feet, the connection would be restored, and King, Flinders and other islands would rise above dry land as low ridges. Tasmania is a very picturesque island with rugged mountains, upland lakes, deeply cut valleys and many mountain torrents. It may be described as a plateau divided into three sections—Western, Central and North-eastern.

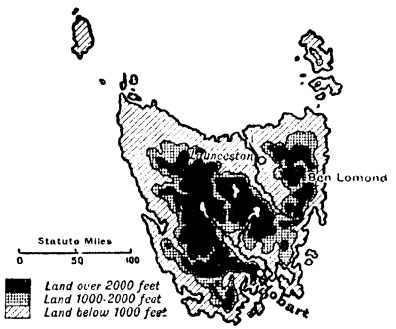

FIG. 74.—TASMANIA: RELIEF.

In South Australia are two parallel cracks in the earth's crust that run from north to south. The land between the cracks has sunk to form a long trough, the Rift Valley; the southern end is under the sea, and is filled by *Spencer Gulf*, while the northern end is occupied by *Lake Torrens*. When the sinking took place the east side of the Rift Valley was forced up to form what are now known as the *Lofty* and *Flinders* Ranges.

The lowlands of south-east Australia are watered by the Murray, which rises on the slopes of Kosciusko. It flows through steep-sided twisting gorges in a wild and rugged country, enters the plains of the *Riverina* at *Albury*, wanders about over these plains, shrinks in volume, and finally enters the sea through Lake Alexandrina. This lake is a shallow lagoon, separated from the ocean by a shifting sandbank which completely bars the way to all but the smallest steamers.

As the main stream is fed principally by melting

snow in the Australian Alps in spring and summer, and some of the tributaries are fed by the winter rains of the south, it seldom happens that the Murray entirely ceases to flow, and it usually forms a navigable highway at all seasons, from Albury to *Echuca*.

Climate.—Just as the hills and plains of the south-east are but parts of the complete Australian plan, so the climates, too, fit in with those we have already described. As this section of the continent is farther from the equator, it escapes the damp heat of the north and the dry heat of the centre, but it is near enough to enjoy temperatures that are never too cold and seldom uncomfortably warm.

In summer, Victoria and South Australia are in the trade-wind belt and receive little rain ; in winter, when the winds have moved north with the sun, parts of these States are in the west wind belt, and receive a great amount of rain, especially along the coast and in the upland areas.

The wettest parts of Victoria—the Great Dividing Range and the upland masses on each side of *Port Phillip*—have an annual rainfall of 48 inches. The Great Valley is much drier, especially in the east, where the rainfall is only 25 inches. The central plains are still drier, and are subject to frequent droughts, while in the north-west the rainfall is both scanty and uncertain. It should be noted, however, that Victoria is the only State in the Commonwealth that has an average rainfall of more than 10 inches over the whole of its surface.

South Australia, on the other hand, has a larger proportion of its area with insufficient rainfall than any other State : more than four-fifths of its surface receives less than 10 inches. There is a good deal of difference, in this State, between one part and another in the matter of rainfall : the sides of the Flinders Range receive as much rain as Sydney, while the region round Lake Eyre is, as we have seen, the driest in the continent. Around Spencer Gulf and in the Eyre's and Yorke peninsulas the climate is of the " Mediterranean " type—winter rains and summer drought.

Tasmania is far enough south to be, at all seasons, in the belt of westerly winds and, therefore, like British Columbia or Southern Chile, receives a fair amount of rain, evenly distributed throughout the year. The wettest part of the island is, naturally, the west, where the winds ascend the mountain slopes : the basins of the *Tamar* and *Derwent*, lying in the shelter of the uplands, are much drier.

Vegetation.—The vegetation varies with the climate. Where the rainfall is abundant, as on the Gippsland Hills and in Tasmania, thick eucalyptus forests flourish. In the wet west of Tasmania they are so dense that they resemble jungles, and the boughs intertwine to form a tangled mass of branches and foliage.

Where the rainfall is less, but yet sufficient, as in the lowlands of Victoria, there are vast stretches of grass with clumps of gums and acacias. As the drier north-west is approached the grass gives place to salt bush, a low, fleshy-leaved shrub upon which sheep feed eagerly. Still farther west, the vegetation is most scanty ; here are the barren, stony, desert regions known as the *gibber* plains.

Farming.—Just as the mountains of one state are continued into the next, and the climates follow one another in their proper order from north to south and from east to west, so the occupations of one State are something like those of its neighbours ; all this is not very surprising, for the boundaries are mere artificial lines. Hence it follows that as physical conditions in Victoria are not so very different from those in New South Wales, the occupations of the two States are similar.

The lowlands in Northern Victoria are slightly undulating steppe-land covered with grass, with clumps of gums and acacias in the eastern section and vast tracts of wattle scrub in the more arid west. In the dry hot summer the vegetation is parched and brown and the land has a desolate appearance, but the first shower of rain revives the withered herbage and covers

the land with green and juicy plants. The eastern part of the plains, with its heavier rainfall, has the richest vegetation, and, like the similar area in New South Wales, is suitable for both wheat and sheep. There are between three and four times as many sheep in New South Wales as there are in Victoria, but as New South

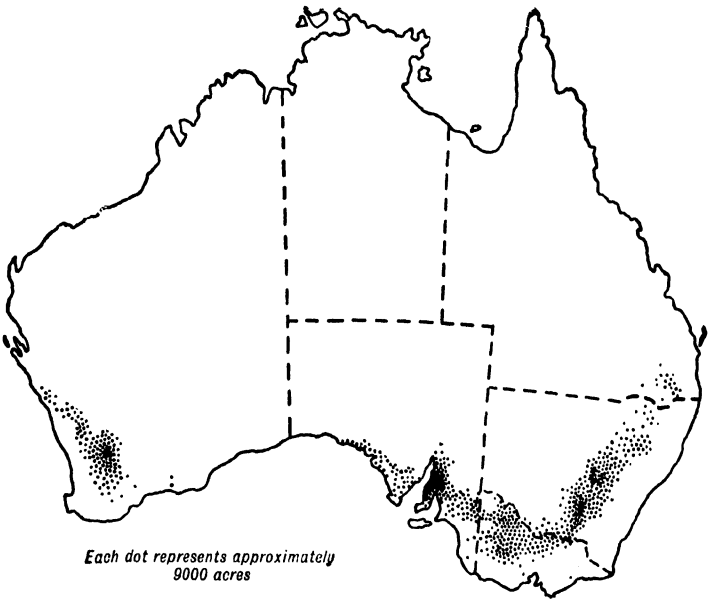

FIG. 75.—DISTRIBUTION OF WHEAT.

Wales is between three and four times as big as Victoria the number of sheep per square mile, 150, is about the same in each State. There are also a large number of sheep in South Australia, chiefly in the salt-bush country.

Wheat is important in the eastern part of the Riverina and again in the south-east of South Australia, where most rain falls. More than two-thirds of the cultivated land of South Australia is under wheat, a greater proportion than that of any other State, and the wheat of this State is amongst the best in the world.

The west of Tasmania is too rugged, too bleak and too wet for either sheep or wheat, but some wheat is grown in the drier east, and there are about one and a half million sheep, principally in the basins of the Tamar and *Macquarie* Rivers. The number is not large, but as the flocks are very healthy, many animals are sent regularly to the mainland to improve the stock in the large sheep stations. The chief crops of this cool damp island include oats, potatoes and hops.

Cattle, which are reared for beef in Queensland, are reared in Victoria, as in New South Wales, for dairy produce : in the Gippsland Plain, dairy farming is of greater importance than in any other part of the State. Nearly half the cattle of Victoria are kept for their milk, which is made into butter and cheese in centrally placed creameries : much of the output goes to Britain.

Fruit.—Wherever sunshine is abundant and moisture sufficient one may expect fruit. As there is sunshine everywhere in Australia, there is fruit wherever there is water, the nature of the orchard varying with the temperature. All the eastern States grow fruit—pine-apples, coco-nuts, bananas and mangoes in the far north ; strawberries, raspberries and apples in the far south. From Tasmania, apples, far and away the chief fruit crop, are exported in large quantities to Britain : the small soft fruits, such as currants, raspberries and gooseberries, are turned into jam.

Those parts of Victoria and South Australia that have a " Mediterranean " climate similar to that of California and Central Chile, produce, like those countries, chiefly peaches, apricots, oranges and grapes, but apples, pears and currants are also grown. The chief fruit regions are, in Victoria, along the Murray at *Kerang*, *Rodney* and *Mildura*, and in South Australia at *Renmark*. About £8,000,000 have been wisely spent in irrigating these areas, and where there were once thousands of acres of barren plain there are now numerous rich and prosperous farm-lands. The brilliant sunshine which is ideal for ripening the fruit is equally ideal

for drying it in the open air, and large quantities of currants and raisins, as in California, are prepared for export: these find a ready market in Britain.

Population.—It has already been pointed out that, in the settlement of a new land, people are at liberty to choose, and usually choose to live in those parts that suit them best. Some white people seem to be able to live almost anywhere, and will spend years, even within the tropics, if fortune calls them, but, as a rule, they prefer temperatures where they can work vigorously. In this respect Victoria is the happiest State in Australia, and therefore the most densely peopled. With the exception of the dry north-west and the rugged mountains of the east, the whole of the State is well populated. In South Australia, on the other hand, the vast majority of the people are in the moist region round the capital: the drier north and west carry only the scantiest population.

Cities.—As in the rest of the continent, most of the large cities are near the sea, and a very high proportion of the total number of people in each State lives in these coastal cities.

The capital of South Australia, *Adelaide*, is 9 miles from the sea, but is centrally situated in that part of the colony where soil, climate and transport facilities have encouraged agriculture and concentrated 40 per cent. of the population of the State. The city is clean and bright, and has beautiful buildings, fine avenues, shaded squares and large parks, but it is not so important as the other capital cities of Australia because its productive hinterland is rather small. The port of Adelaide, Port Adelaide, on the shores of the wide *Gulf of St. Vincent*, has direct connection by railway with Perth and Fremantle on the one side and with Victoria and New South Wales on the other.

In the south of Victoria is the magnificent harbour of Port Phillip, a great sheet of water 800 square miles in area, which is sheltered from ocean storms by the narrowness of its entrance between the Lonsdale and Nepean

points. Into the north of this harbour flows the Yarra Yarra, near whose mouth stands *Melbourne*.

From east and west there are easy routes to this point across the Great Valley, while to the north the highlands are low and can be crossed by a railway without any great difficulty. Since Melbourne is at the

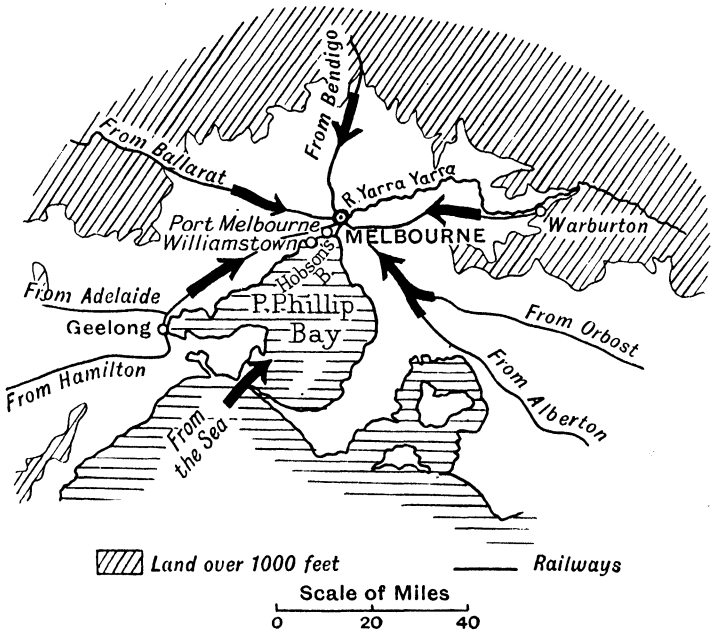

FIG. 76.—SITE OF MELBOURNE.

junction of these north-south and east-west routes with the sea, it is natural that most of the export trade of Victoria, comprising wool, live stock, frozen meat, butter, leather, wheat and gold, should pass through this port. Vessels can sail up the Yarra Yarra into the centre of the city to load or unload, but during the last half-century ocean-going ships have increased so much in size that the largest liners of all cannot reach Melbourne and now berth in *Hobson's Bay*, where two out-ports have

been built, *Williamstown* to the west of the mouth of the river and *Port Melbourne* at the head of the bay.

Melbourne now contains about one-third of the whole population of the State, is the second largest city in Australia, and, as befits its central position with regard to the population, the capital of Victoria. "Little did the settlers of 1835 think, when they built their mud-huts on the then solitary banks of the Yarra, and surveyed the immense and desolate meadows around them, that in the span of a man's life a colossal city would cover them, that the dreary spot which they bought from the black fellows for two blankets and a bottle of spirits would be the site of one of the biggest cities in the British Empire."

From the west of Port Phillip, Corio Bay extends well into the plain: at its head is *Geelong*. Behind lie the best sheep pastures of Victoria, so it is natural that the chief exports from the port are wool and frozen meat. It was at Geelong that the first woollen mill was erected, and this city is now one of the most important industrial centres in the State.

It may be added here that Victoria, unlike New South Wales, has no abundance of good coal, and most of the fuel has to be brought by sea. There are, however, near *Morwell*, considerable resources of a soft inferior coal, lignite, which is largely used for generating electricity that is supplied to the capital and adjacent towns.

Tasmania has a number of fine harbours, and on one of these, one of the best in the southern hemisphere, is *Hobart*, the capital. From Hobart a great valley runs through the highlands, and has at its other end the only other large town in Tasmania, *Launceston*. As Launceston lies nearer to Australia than Hobart, it has a greater trade. Nearly half the population of the island lives in these two districts. Characteristic industries are jam-making at Hobart and smelting at Launceston.

A White Australia.—All the Australian towns and industries belong to a modern civilisation and not to that of the aborigines, and, as in North America, they

belong to the civilisation of white Europe and not to that of yellow Asia. In parts of North America, however, white man brought in the black to do the hard manual labour of the cotton fields and the tobacco plantations: his negro servants, once slaves, have now increased so enormously in number that he is faced with very serious "colour" questions that he finds it difficult to answer.

Now in Australia the aborigines are few in number, and there is no negro problem as in the United States. There is, however, an equally troublesome yellow problem due to the desire of races like the Chinese, Malays and Japanese to enter the country. The Malays would find Northern Australia very like their native land. Japanese would be quite at home in the South-east and Chinese would live anywhere. But the yellow women will work in factories ten hours a day for seven days a week for wages on which a white man cannot live; thus, if yellow people are admitted to the factories or the farms, the white man will lose his employment. Hence, if there is one thing the Australian is determined about, it is, if possible, to keep this continent for the white man.

North America cannot get rid of its coloured races; they are already there. Australia refuses to admit coloured people, and so create a problem that she would not be able to solve. "Australia is the one white man's country which has a reasonable hope of remaining white. The race is still pure, and as we are sea-girt and have no land frontiers, we can, and mean to, keep it pure."

This policy of a white Australia offends the yellow races, and, as an empty continent is an impossibility, the question is often asked as to whether Australia can really be filled by white people. In the south white people can live comfortably, but for long it was assumed that Northern Queensland and the Northern Territory were too hot. A Medical Congress, however, sitting at Brisbane, declared that Northern Australia could be developed by white labour. At one time the sugar-fields of Queensland were worked by natives from the

South Sea Islands, and their death-rate per thousand was three times that of the white men who now do the same work. The difficulty, however, is not with regard to strong young men, but with regard to women and children. Can they live in lands with the wet bulb above 70° for eight, ten, or twelve months, when nowhere else in the world has this been found possible? Time will show; but Australia has this advantage, that it will be possible for white peoples to spread gradually northwards into hotter lands, making small alterations in their habits and customs, so as to fit into new conditions, as the land fills up. This is possible nowhere else in the world, but it will take time.

Railways.—In a land where there are such differences and where one part is sometimes separated from another by areas over which travel is not easy, there is no natural unity: there is, rather, as in the case of, say, Victoria and Western Australia, almost a natural separation. But where all the people are practically of the same race and the boundaries between the States are only artificial lines, it would be foolish to allow physical geography to take control. In North America there was the same kind of geographical separation of east from west, but man conquered it: by making roads and railways he united that which geography had divided. In Australia roads and railways should serve the same purpose.

At present the main road is the sea, by which all the ports can be brought into connection with each other; but railways are increasing in importance.

One line is being built to connect the north and the south; it has already reached Alice Springs in Northern Territory from Adelaide, and Daly Waters is at present the railhead striking south from Darwin.

Another line, completed in 1917, connects the east and the west, so that it is now possible to go from Cairns in North Queensland to Fremantle in West Australia by train. It is not possible, however, to take a through train, as one may from Quebec to Vancouver, or from

New York to San Francisco. A traveller from Brisbane to Perth must, owing to differences of gauge, in different sections, change trains no fewer than five times: the longest run without a change is from Port Augusta (South Australia) to Kalgoorlie (Western Australia).

The frequent changes help to make the sea route, especially for goods, even more important than it would

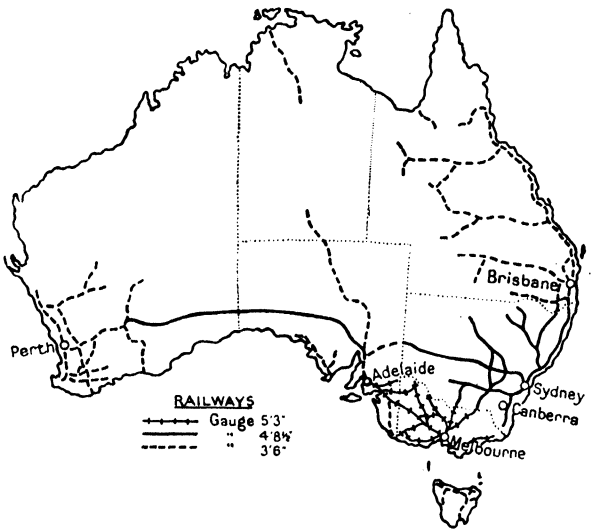

FIG. 77.—THE RAILWAYS OF AUSTRALIA.

naturally be, and they cause the railways to separate rather than to unite the States as they should. It will cost a good deal of money to convert all the lines to the same gauge, but the work has already begun, the standard chosen being that of the trans-continental line, 4 feet $8\frac{1}{2}$ inches.

Here again, as in South America, we have a continent where the climate, the character of the ground and the enormous area lend themselves to the development of air routes, and the aeroplane is adding its influence in removing the effects of isolation.

The Commonwealth.—The strongest bond, however, between peoples, as between families, is sentiment, the feeling of belonging to the same folk, with the same speech, history and customs. At the same time sentiment is apt to die if it cannot find some way of putting itself into action: it grows stronger the more it is used. In Australia this feeling that all the people are one people has found the same way of expressing itself as in Canada and the United States of America. It has set up one central Government to do certain kinds of work, not for this or that State, but for the country as a whole.

On January 1, 1901, the States united to form one Commonwealth, with a Governor-General to represent the King. There is an Upper House or Senate consisting of six members from each of the six States, and a House of Representatives, whose members are distributed amongst the States according to population. The Commonwealth Parliament controls the trade, customs, defence, posts and telegraphs, railways, shipping, lighthouses, finance and currency, but each State manages its own separate local affairs.

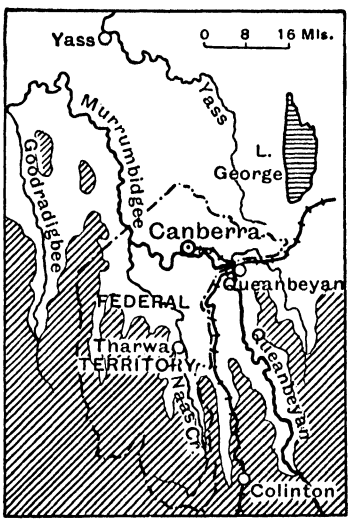

FIG. 78.—THE POSITION OF CANBERRA.

The Capital.—When a capital for the Commonwealth as a whole became necessary, the same problem arose as had already arisen in similar circumstances in Canada and in the United States. Washington became the capital at the time when only the east coast was settled, and when there was jealousy between New

England and the Cavalier States of the South. Ottawa became the capital of Canada, on the borders of Quebec and Ontario, as a compromise between Quebec and Montreal. So in Australia there was considerable jealousy between Sydney and Melbourne, and, as a compromise, a site for a new city was chosen at *Canberra*. This is in the south-east of New South Wales, about 200 miles from Sydney and 430 miles from Melbourne. About 120 miles to the east of Canberra *Jervis Bay* has been acquired as a site for the port of the capital, and will be connected with Canberra by rail. But a few years ago the site of the Federal Capital was just an undulating plain, surrounded by a rim of hills, with a few willow trees marking the winding course of a brook. The only signs of settlement were an old country church and a few cottages. Since then the area has been furnished with many of the things that are needed for the growth of a city: water, gas and electricity have been provided; a good system of drainage has been laid; houses and hotels have been built; an impressive Parliament House, opened in 1927, has been erected. No doubt this capital will remain, just as Washington and Ottawa remain, even if conditions should change.

And it is a symbol of Australian unity. As Sir Henry Parkes expressed it, "The common thread of kinship runs through us all."

CHAPTER XIII

NEW ZEALAND

WITH New Zealand we reach the last of the important lands round the Pacific. It is about as far south of the equator as Japan is north and, in some ways, resembles these islands, but, owing to reasons that will presently be given, it differs widely from Japan in climate, customs and density of population. In some ways it resembles Britain, and is often referred to as the "Britain of the South." We shall have to ask ourselves how far this description is true.

New Zealand, like Great Britain, is long and narrow, but consists mainly of two large islands instead of one, and has a greater area.

Differences from Britain.—The highlands of New Zealand resemble some of those of Britain in having much the same general direction, namely, from south-west to north-east, but there the resemblance ceases, for New Zealand is much more mountainous and has summits three times as high as any in Britain. Moreover, the New Zealand highlands are, apparently, continued under the sea by a ridge which, in places, reaches the surface as the *Kermadec, Tonga* and other islands in the north, and as *Auckland* and *Macquarie* islands in the south. More important still, they form part of that almost unbroken belt of folded mountains that holds the Pacific in a great girdle of crumpled rock, and are situated in a section of the girdle where upheavals and sinkings have been most intense. It has already been pointed out that the greatest depths in the

Pacific lie on this side of the ocean. Within 100 miles of the Kermadec Islands is the greatest known depth in the South Pacific; the floor sinks to 5,155 fathoms, or over $5\frac{3}{4}$ miles below the surface of the water. All this tends to show that New Zealand fits into its place on the globe, a place quite unlike that occupied by Britain.

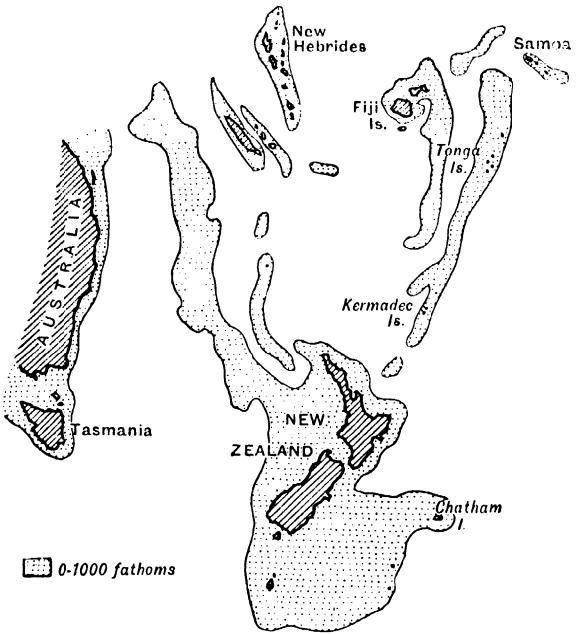

FIG. 79. TREND LINES.

Because the mountains of New Zealand form part of a line of comparatively recently folded mountains they also differ from those of Britain in containing volcanoes and suffering from earthquakes. The latter disturbances are greater in North Island than in South Island, and occur most frequently where there is a sudden change in the direction of the folds.

North Island, Relief.—The main ridge in North Island lies nearer to the east coast than the west, and

is divided by fairly low passes into four or five sections. Many parts are extraordinarily wild and beautiful; dense bush and beautiful ferns completely cover the

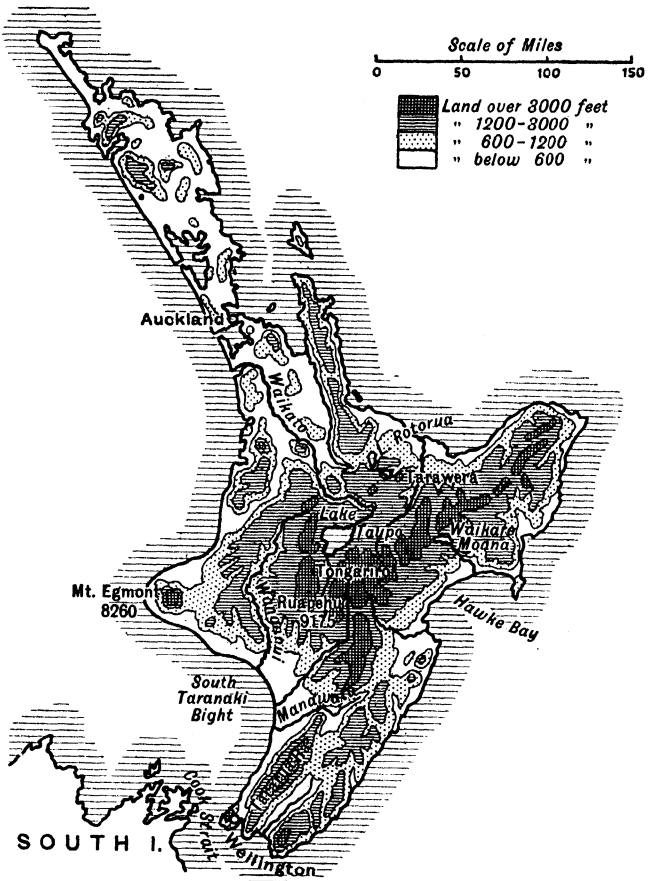

FIG. 80.—NEW ZEALAND: NORTH ISLAND, RELIEF.

mist-laden ranges except where precipitous cliffs bordering river gorges stand out bare and gleaming in the sunlight. Heavy rainfall tends to a luxuriant vegeta-

tion and the forest trees are always damp and dripping. The surplus water finds its way into mountain torrents that hurtle, through deep trench-like gullies, eastwards to the sea.

In the midst of the eastern upland belt is the picturesque lake of *Waikare-Moana*, surrounded by heavily-wooded, rocky mountains through which many strong streams pour their waters into the lake. As the lake is at an altitude of 2,000 feet and has an outlet through an underground chute, it should not be difficult to harness its waters for the production of electricity.

On the west of North Island the uplands of the Auckland peninsula are continued southwards along the coast as a series of low heights.

Between the two upland regions is a high plateau, the chief region of volcanic activity, with active volcanoes, spouting geysers, spluttering mud volcanoes, hissing steam jets and fumaroles from which evil-smelling gases escape. In the neighbourhood of Auckland also there are sixty cones and craters and an abundance of pumice stone, lava streams and cinders. Most of the volcanoes are extinct, but many are still active; amongst the latter are *Tongariro* with three craters, *Ruapehu* and *Tarawera*, which burst out into a severe eruption in 1886.

The disturbances at Tarawera began with a slight earthquake shock soon followed by others that increased in violence. With the beginning of the actual eruption on one of the summits of the mountain an even more violent earthquake, followed by a loud and lengthy roar, tore open the crest: a black cloud rose in a wide column, spread outwards at the top and covered the whole of the summit. "Red bodies, which were doubtless red-hot fragments of ejected rock, were now seen darting from the black cloud, whilst lightning began to shoot out from it, accompanied by the roll of thunder. A red glow lit up the column; and from time to time, a fresh outburst took place on the mountain, the clouds were lit up with a stronger glow, and red-hot stones, described

by observers as fireballs, were seen falling around the summit. By this time the mountain seems to have been in full eruption, and presented a magnificent spectacle." [1]

In the centre of the plateau is Lake *Taupo*, the largest lake in New Zealand; the Maoris call it "the sea."

To the north and north-east of Taupo is the Hot Lake District, where geysers and mud volcanoes give witness to the hot interior. As many as seventy-six separate clouds of steam have been counted from a single point. What often appears as solid earth is nothing but a crust, beneath which lie huge reservoirs of boiling mud. The waters of *Lake Rotorua* and other warm lakes are used by the natives for practical purposes. "They cook their crayfish and white fish in them; they boil their cabbage, they wash their clothes in them; and they wash themselves. They dig out baths, bring streams from cold springs to temper the hot, and pass half their time lounging in the tepid water. I heard a grunt as I passed one of these pools. I supposed it was a pig. Looking round, I beheld a copper-coloured face and shoulder, a white head, and a pipe sticking out of a mouth." [2]

All these hot lakes, geysers and volcanoes mark a line of weakness in the earth's crust which runs from south-west to north-east, parallel to the axis of the folded mountains along the coast.

The plateau is drained to the north by the *Waikato River* and to the south by the *Wanganui River*. The Waikato, the longest river of New Zealand, rises in the volcanic district round Tongariro; it flows into Lake Taupo, leaves the lake as a strong clear current which rages through a narrow channel between steep rocky walls, leaps, a blue and silver column, into a broad deep tree-fringed expanse below, and finally reaches the sea

[1] Professor A. P. W. Thomas, *Report on Eruptions of Tarawera and Rotomahana.*

[2] Froude, *Oceana.*

on the west of the island after a course of 170 miles, only 50 of which are navigable by small steamers.

The Wanganui, after a course of 140 miles of fern-clad depths, exciting rapids and ever-changing gorgeous scenery, empties itself into the South Taranaki Bight.

The lowlands of North Island lie round the coast: there are only two that can really be called plains, one south of Hawke Bay and the other round the Manawatu. The greatest extent of lowland is in the Auckland peninsula, but it is hilly, with the stumps of ancient volcanoes. From the lowland of Taranaki rises an extinct volcano, Mount Egmont (8,260 feet), whose white snow-cap and perfect shape recall the famous Fujiyama of Japan.

South Island, Relief.—In South Island, the *Southern Alps* form an unbroken line from south-west to north-east, and are highest and narrowest near the centre. Towards the north they divide into several ranges, the chief of which are the *Kaikoura Range*, separating the Clarence River from the Awatere, the *Spencer Range*, where the Wairau has its source, and the *Lyell Range*. The Kaikoura Range is part of the same ridge as the *Tararua Range* of North Island.

The highest peak, Mount Cook (12,349 feet), the highest in New Zealand, and much higher than any mountain in Australia, is surrounded by ten other peaks all over 10,000 feet in height, while in other parts of the system there are many peaks over 8,000 feet. As the mountains rise so high the tops are above the line of perpetual snow, and there are numerous glaciers, some of which exceed those of the European Alps in size. The finest glacier is Tasman, 18 miles long and more than 2 miles across at the widest part; at the Hochstetter Fall this descends between 3,000 and 4,000 feet as a curtain of broken, uneven, fantastic ice.

Many of the valleys of the eastward-flowing rivers are blocked and are filled with deep, peaceful lakes from 40 to 80 miles long, all of which are threaded by little tourist steamers. The lakes of South Island, of

which the most noted is *Wakatipu*, differ both in origin and shape from those of North Island. The latter are of volcanic origin, and are broad and comparatively

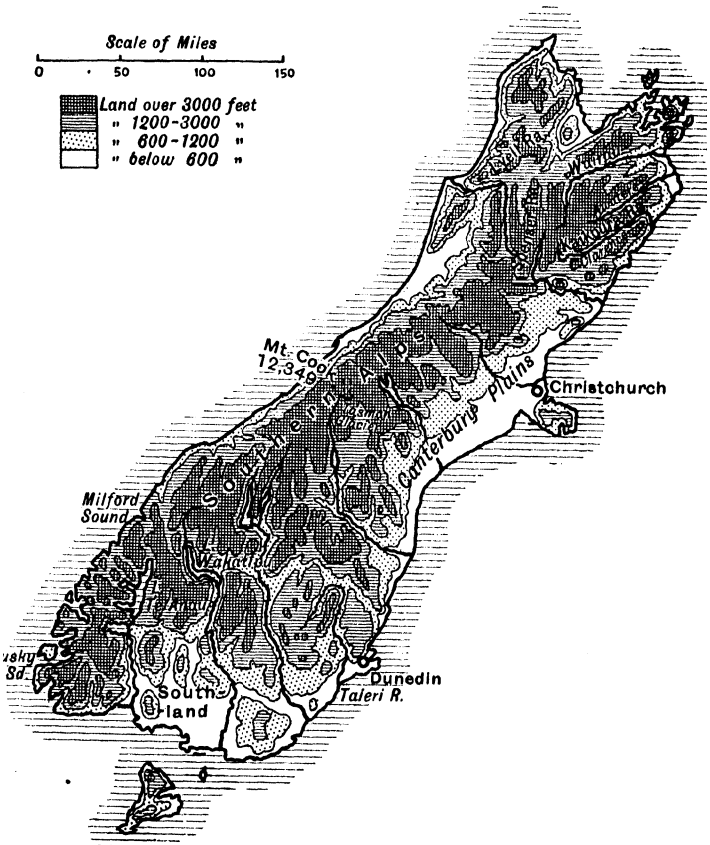

FIG. 81.—NEW ZEALAND: SOUTH ISLAND, RELIEF.

shallow; the former are of glacial origin, and are long, narrow and deepset among high mountains.

In the far south-west, where the rocks, like those of Norway and North Scotland, are very old, there is yet another kind of country. Round the east of this

ancient mass, perhaps another remnant of Gondwana-land, the ranges of the Southern Alps have been compelled to change direction and spread out south-eastwards to broaden this part of the island.

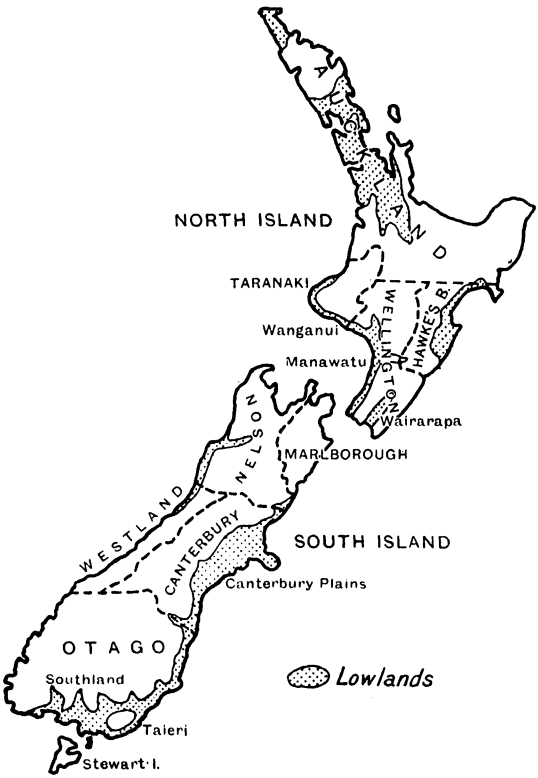

FIG. 82.—THE LOWLANDS OF NEW ZEALAND.

On the seaward side of the old block, the coast, like that of British Columbia or Norway, is deeply indented, and contains a number of long narrow bays or fiords of wild beauty and grandeur. *Dusky Sound*, which runs inland for about 20 miles and has many arms, is dotted with forested islands. Most of the fiords are exceed-

ingly deep: at the innermost end of *Milford Sound* the depth is one-fifth of a mile. In this, the best known of all the fiords, mighty mountain peaks rise sheer from great depths; foaming waterfalls plunge from dizzy heights and leap from shelf and crag; and the whole landscape is clothed in dense forest up to the edge of the snow.

As the Southern Alps and their foothills cover the greater part of South Island, the lowlands, compared with the total area of the islands, are of limited extent. In the fiord region there is none at all; farther north is a long narrow plain, part of Westland; in the south-east are the *Taieri* plains south of Dunedin and the fertile lands of Southland; on the east, towards the centre, are the famous *Canterbury Plains*. The latter extend 150 miles from north to south, are backed by the snow-capped ranges of the Southern Alps and contain between 4,000 and 5,000 square miles of a soil whose fertility is shown by the number of farms.

As we look back over this description of the relief of New Zealand we find little to remind us of Britain. The hot lakes, geysers and volcanoes of North Island and the high snow-clad mountains and glaciers of South Island mark off the "Britain of the South" as something quite different from the Britain of the North, and though the fiords may, perhaps, remind us of Scotland, they are all on a much greater scale.

Climate.—The one natural feature in which, more than in any other, New Zealand resembles Britain is the climate. New Zealand lies roughly half-way between the equator and the pole, and, though nearer the pole than Australia, is nearer the equator than Britain. New Zealand is sometimes said to be the antipodes of Britain, but Fig. 83 shows that the true antipodes of New Zealand extend from Central France to North Africa. Hence the mean annual temperature of Auckland is something like that of Lisbon; that of Wellington is about that of Madrid; that of Dunedin and Paris are the same. These statements, though true, are a little

misleading. In summer the temperatures in New Zealand are more like those of Britain than of places in similar latitudes in Europe, even when those places are equally near the sea. Thus Auckland, in summer, is only just a very little warmer than London, while Dunedin in the south of New Zealand has the same temperature as Nairn, in the north of Scotland.

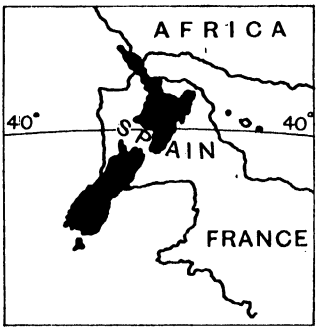

FIG. 83.—NEW ZEALAND, ON FRANCE AND SPAIN.

The climate of New Zealand, like that of Britain, is remarkably equable, and for the same reason, i.e. the presence of the sea. In both the Britains the least difference between summer and winter is found in the west; in the east, where the winds come mainly from the land, the difference in temperature between the two seasons is greater.

New Zealand, like Britain, owes some of its mild winter temperature to warm water drifted from regions nearer the equator by westerly winds: in Britain this is brought by the North Atlantic Drift; in New Zealand it is brought by the East Australian Current, whose effect is greatest on the west side of South Island.

Most of New Zealand, like the whole of Britain, lies in the west wind belt, here called the "Roaring Forties." These winds, where they pass over the highlands, expand and cool, and bring much moisture to the west, particularly in South Island, where, in places, the rainfall is as much as 240 inches. On the highest mountains most of the moisture falls in the form of snow that goes to feed the great glaciers which glide down the valleys of the Southern Alps. By the time the winds have passed over the crests of the ranges they have lost much of their moisture. They become warmer as they descend, and

the eastern side is, therefore, as in Britain, the drier of the two. The average rainfall on the eastern lowlands is about 25 inches : in well-sheltered regions it may even be as little as 15 inches.

North Island, as we have seen, lies in about the same latitudes as Southern Europe, and, in the Auckland peninsula, particularly, has much rain in winter like South-west Australia and other countries in " Mediter-

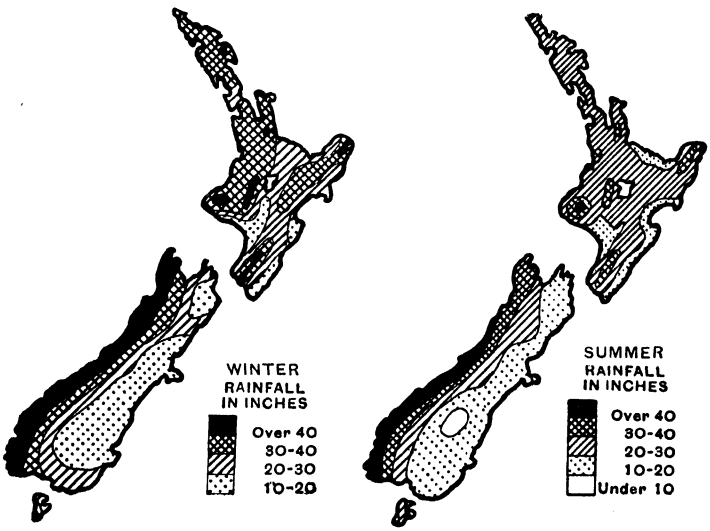

FIG. 84.—NEW ZEALAND : RAINFALL.

ranean " latitudes ; in this case, however, the summer, though drier, is not dry, for the trade winds blow from the sea and are laden with moisture. Then, too, the mountains of North Island are not so high or so continuous as those of South Island, and they do not lie so near to the west. Hence the rainfall of North Island is not so well marked off in belts as that of South Island : the general distribution is more even. The amount is almost everywhere between 40 and 70 inches, only a few places having less than 40 inches. In none of the islands

is there ever any season of drought as there is sometimes in Australia.

Vegetation.—Because the climate of New Zealand resembles, on the whole, that of Britain, one might expect that the natural vegetation of the two countries would also resemble each other.

There are, in New Zealand, three areas of natural vegetation whose distribution is determined by the distribution of the rainfall.

1. *Forests.*—The chief forests are on the wet west sides of the mountains, and contain about 120 species of native trees, all of which are evergreens and many of which yield valuable timber. Such areas are known as "the bush," and their extraordinary density of growth with interlacing lianas, "supplejacks" and other parasitic growths produces an effect of almost equatorial luxuriance. The most important tree of the forests of North Island is the *kauri* pine, which often reaches a height of from 180 to 200 feet; its natural home is the province of Auckland. The trees have been felled so extensively that supplies are now becoming scarce, and the Government allows only a limited quantity to be exported each year. Kauri wood is prized for houses and ships, and the resin is employed in the manufacture of different kinds of varnish. In some areas the resin is found fossilised, and is known as kauri gum.

FIG. 85.—FORESTS IN NEW ZEALAND.

The chief trees of South Island are red and white pines; the timber of the latter has been widely used, in

both Australia and New Zealand, in the manufacture of cheese and butter boxes, but it is now becoming scarce.

2. A belt of *ferns* covers the lower hills. The ferns vary in size from a mere mossy tuft to giants with fronds 20 feet long. The fern area extends over hundreds of square miles of good land, and is cleared, when necessary, by burning. So much is fern growth characteristic of New Zealand that it is no wonder the country is sometimes called the " Land of Fern."

3. *Grass lands* are found west of North Island and on the east of South Island ; the native grass was of a wiry character and not good food for sheep and cattle. European grasses have, therefore, been introduced, and as the climate is so mild, they flourish all the year round. Grass, as we shall presently see, is the foundation of New Zealand's prosperity.

So far as there are both forests and grassland the resemblance of New Zealand to Britain once existed, but the forests of Britain have now mostly disappeared, and the resemblance is not a very close one : neither the native trees nor the native grasses of the two Britains are like each other, and, in New Zealand, there is a wide belt of ferns of all sizes that corresponds to nothing in Britain.

This chapter, so far as it goes, shows that New Zealand is not altogether another Britain. The resemblance is greatest in the matter of climate—moist, warm, but not too hot to destroy energy, cool enough to stimulate but not to chill, and even more equable than that of Britain. New Zealand is, like Britain, a land suited for white occupation, where work can be carried on all the year round, and whose healthiness is shown in the lowest death-rate in the world. Here British men and women may find homes more like those of their mother country than almost anywhere else in the British Empire. On the other hand, the Alpine heights, glaciers, volcanoes, geysers, native trees and grasses and a rich growth of ferns suggest that even if this be another Britain it is a Britain with a difference.

CHAPTER XIV

THE PEOPLE OF NEW ZEALAND

The Maoris.—In addition to the differences already noted between Britain and New Zealand, there is another that is even more striking. In Britain, even if the people come of many different stocks—Celts, Britons, Angles, Saxons, Danes, Normans—these stocks are all white. In New Zealand there is a native race, the Maoris, whose ancestors lived in the Pacific Isles. In wonderful canoes they made their way across the ocean, and had long been in possession of North Island when the first white man arrived upon the scene. In this island they found a climate not too different from that of the islands they had left, rich lowlands, fine forests and plenty of fish. Few of them ever settled in South Island, which lay somewhat out of their way, and where the climate was rather cooler than that to which they were accustomed.

The Maoris lived in clans, tilled the soil and were skilled in boat building, carving and other arts and crafts. They were very intelligent, with a civilisation, in some ways, of a very high order, but it must not be forgotten that they had themselves driven out an earlier race, that they were cannibals, and that their chief delight was in warfare and bloodshed.

These brown-skinned, well-made, intelligent Maoris are much superior, in every way, to the aborigines of Australia, who, as we have seen, are amongst the most primitive people in the world. They are akin to the inhabitants of Tahiti and of the other Polynesian islands

of the Pacific, about whom we have read in Chapter I. At one time they were believed to be dying out; they themselves said, "As the white man's rat has extirpated our rat, so the European fly is driving out our fly. The foreign clover is killing our ferns, and so the Maori himself will disappear before the white man." But the Maoris have not disappeared; in recent years their number has increased by some thousands. The British stopped them from killing and eating each other, set apart in North Island large districts to be reserved for their exclusive use, and so educated them that they have now mostly forsaken their less pleasing habits and, instead of living entirely in reserves, they now tend to be absorbed into the white population. They have adopted the habits of the white man, have become agriculturists and stock-raisers, engage in European trades and professions, take part in public affairs, and are represented in the Dominion Parliament by men of their own race. And in doing all this they have done something which, so far, has not been done in any other part of the world: they have shown that it is possible for two quite different races to live side by side in harmony and peace. Unlike North America with its black problem, or Australia with its yellow one, New Zealand has no real colour problem at all.

The rest of the population is almost completely of British descent: it is not, to any extent, even a mixture of other white peoples, as in large parts of North and South America.

History.—New Zealand was discovered by Abel Tasman, a Dutchman, who named the land after one of the provinces of Holland and whose own name remains in Tasmania. The man who made much of the coast-line familiar was an Englishman, Captain Cook, whose name is preserved in Cook Strait. The first white men to visit the country, outside the ranks of explorers, were sailors seeking from the forests long spars for their ships, whalers and roving vagabonds of the sea, who visited, chiefly, North Island: if they wanted to trade they had

to go where their customers were. Some of them married Maori women, settled down and brought a certain measure of white civilisation to the land; a few whalers established shore stations in South Island. A British missionary, Samuel Marsden, came over from Australia in 1814 and established a mission station close to the Bay of Islands.

But as yet New Zealand was almost an unknown territory to British people. The country had to wait a long time after its discovery before there was any kind of organised settlement. The first real attempt to settle New Zealand with white people began with the formation of the New Zealand Company in 1825 and the sending out of a party of emigrants to North Island, but the attempt was not a great success. Fourteen years later the Company sent out another ship, and the English Government had to take account of the fact; it was difficult for them to allow their subjects to settle in a land where natives were hostile and do nothing to protect them, or to allow those same settlers to be a law unto themselves. It can truly be said that people in Britain did not wish to have anything to do with New Zealand. The Government was almost always afraid of having its hands too full, but in New Zealand, as in several other parts of the empire, adventurous and commercial spirits made their way, whithersoever they pleased, not caring overmuch whether the Government approved or disapproved. They built their share of the empire, and, when their time came, handed it over, as a going concern, to the care of the Motherland.

In 1840 Queen Victoria was proclaimed sovereign over New Zealand; the Maoris kept their lands and much that never was theirs at all, and British rule began. There were troubles from time to time with the natives, chiefly over land matters, but the British never broke their pledges to the Maoris and, by their loyalty to their word, raised the natives to the high level of civilisation already noted.

Farming.—Upon the lands that the Maoris handed

over for white occupation, settlement slowly but surely increased, with the result that New Zealand began to resemble Britain in other ways than in climate. Such differences, as we have already noticed, between the two countries, though great, were never really important, and the British found, as they still find, less need to change their way of life in the new lands of the south than in almost any other part of the earth. They are more at home here than elsewhere, and it is not surprising that they have settled in large numbers and with great success. Even British trees and birds flourish better than they do in their own land, and the settlers have been able to follow, but with greater freedom and by better methods, the old occupations of their forefathers, chief amongst which are the different forms of farming.

Sheep.—The mild and equable climate which makes it possible for stock to thrive in the open air, and the ease with which British grasses could be grown led to the introduction of British animals. Sheep-farming was early established as the chief source of wealth. In North Island the country had first to be cleared by felling trees, but the Canterbury Plains of South Island were wide, open and well watered, and had a growth of tussock grass that could support sheep until the imported grasses had been sown and grown. In the east, that is, the drier side of South Island, sheep were soon reared in large numbers as in the dry east of Britain, but the farms and the flocks were larger. The chief breed was at first the merino, as it was and is in Australia, but at the present time British breeds of sheep are the most important, though one or two of them have been a little changed.

The shepherds, like the sheep, are of British origin; from the hills of Scotland and the Downs of England they have been drawn to the flocks of the antipodes, where, in a healthy and delightful climate, they live a life as free as man is likely to find anywhere.

Meat.—Formerly, though raising meat and wool went hand in hand, it was the wool alone that was of

any great value: the meat could not be exported and was almost worthless. With the introduction, however, of methods of freezing this condition of affairs was changed, and a market for the meat as well as for the wool had to be found. Britain provides this market,

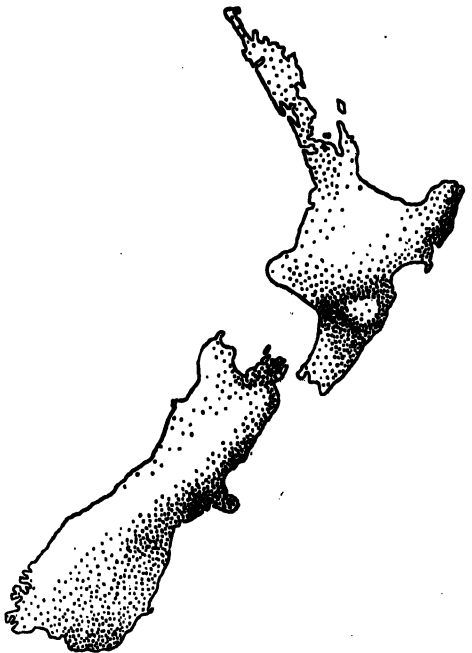

FIG. 86.—NEW ZEALAND: SHEEP.

and, each year, receives and eats some millions of New Zealand sheep.[1]

In order that the foreign buyer shall have confidence in the meat sent to him, every carcase that is slaughtered is examined under Government supervision and its quality certified. To reduce the cost of production the

[1] Exports of New Zealand, average of years 1924–6: frozen meat, £10,187,000; wool, £15,885,000.

sheep-farmers and graziers have co-operated in the provision of slaughter-houses and meat-preserving works.

Dairying.—Beef, as well as mutton, is now exported, but the main industry connected with cattle is that of the making of butter and cheese, the export of which also depends upon refrigerating processes. " In the old

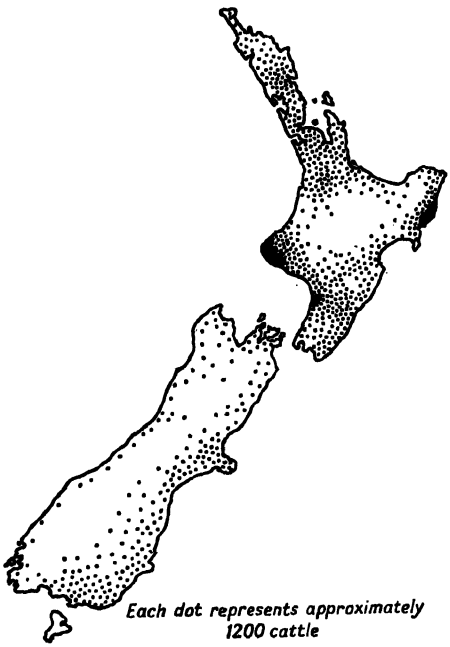

FIG. 87.—NEW ZEALAND : CATTLE.

colonial days butter and cheese making were almost entirely on a scale for home consumption. On many farms they did not trouble to run a dairy at all, but obtained butter from their neighbours. The quantity on the whole was indifferent, and neither butter nor cheese would keep long enough to ship to England. Australia was the only market." [1]

[1] E. H. Schofield, *New Zealand*

Nowadays two men and a boy, with electrically driven machines, can milk 100 cows in a day: milk and separated cream are sent daily, by motor wagon or other means, from between 50,000 and 60,000 farms, to factories where they are made into butter and cheese; expert instruction and careful inspection and grading ensure that the quality is always good. When refrigeration made light of the 13,000-mile journey to Britain, the quantity exported rose from a few tons to hundreds of thousands of tons. It reaches London during those months of the year when supplies from nearer sources, such as Denmark, Holland and Canada, are low, and therefore finds a ready market. New Zealand is now the chief source of Britain's imported dairy produce and the chief competitor of Denmark as to the quantity and quality of butter.

Agriculture.—Though New Zealand is, first and foremost, a grazing country, much land is given up to agriculture: a great deal of what was once sheep pasture is ploughed for wheat, principally in the centre and south of South Island; the chief wheat area is now, in fact, the Canterbury Plains. The yield per acre is fairly high—between two and three times that of Australia—but as the demand for dairy produce and meat is more constant than that for wheat, the New Zealand farmer tends more and more to grow wheat chiefly for use in his own country.

Oats are also an important crop, and if the demand were large enough could be raised in abundance in South Island, where, especially in *Otago*, the home of the porridge-eating Scot, there is some of the finest oat country in the world. The world, however, buys its supplies of cereals from larger and nearer fields of production.

All these crops tend to make New Zealand much more like Britain than it was in the days when the Maoris were the only inhabitants. Others, of less importance, tend to increase the difference. For instance, there is the cultivation of a so-called "flax" plant: this,

despite its name, is unlike European flax. It grows, usually, in swampy places, and has sword-shaped leaves, from which the Maoris extracted an exceedingly strong fibre which they used for many purposes, including the making of rope.

Whereas, however, the Maoris did all the work by hand, the white man does it by machinery in factories. In these factories is made much of the binder-twine used in the machines that bind as well as reap the crops of both New Zealand and Australia.

Every year fruit growing increases in favour. The first orchards were planted by English settlers to supply their own needs : it was not till it was found that wide tracts of land in Nelson, formerly thought of as useless, were suited to the apple that fruit was grown for export. Owing to the differences of climate it is possible to produce oranges, peaches, nectarines and grapes as well as apples, pears and plums. Connected with the fruit industry are the making of honey and wine and the canning of fruit.

Minerals.—Farming, stock-raising and dairying are the most important industries, but the country contains many minerals—coal, iron, copper, graphite and gold—and mining provides another occupation for a number of people.

Originally gold was the most important of the minerals, not so much on account of the value of the ore as of the fact that it attracted settlers at a time when settlers were badly needed. The production of gold has much decreased, and coal, which is widely distributed, is a richer source of wealth and usefulness.

Coal.—Much brown coal is mined in Auckland and Otago, but the best coal is obtained in the province of Nelson and on the west coast of South Island around Westport and *Greymouth* at the mouth of Grey River. Great difficulty was formerly experienced in the transport of the excellent coal from the latter field, for the river harbours were obstructed by bars, and there was no rail connection with the east. A great tunnel, 5¼ miles

long, the longest in the British Empire, has, however, been completed, so that the west coast now has direct communication with Christchurch, and the bar which formerly closed the entrance to the estuary at Greymouth has been cleared: there is now a direct coal export from the latter port.

New Zealand is fortunate in possessing much water-power. The abundant, steady rainfall and the height of much of the land give rise to rapid streams that can provide a great deal of power, and a beginning has already been made in the use of it for the production of electricity.

New Zealand is not a manufacturing country, and such factory industries as exist are largely connected with various agricultural pursuits and personal needs. Thus there are fell-mongeries, tanneries, refrigerating works, printing works, clothing and boot factories and ham and bacon-curing factories; the manufacture of soap and candles, coaches and agricultural implements all employ a small but steadily increasing fraction of the population.

Railways.—As we might expect in a land of recent settlement, larger than Britain, but with a white population of less than one and a half millions, railway construction has been hindered by the cost of building and maintenance, and transport is still mainly by sea. There are many little ports placed, not as in Britain, on river estuaries, but at the head of land-locked arms of the sea.

New Zealand has been a difficult country for the railway engineer on account of the many high mountains and the number of the river valleys. There are, in a total length of about 3,000 miles of railway, no fewer than 27 miles of tunnel and nearly 50 miles of bridges. The first railways were built with different gauges, as in Australia, but the Government, foreseeing the difficulties that would arise, adopted and made compulsory one uniform gauge of 3 feet 6 inches.

The main railway of South Island passes, naturally,

over the eastern lowland; that of North Island, equally naturally, keeps to the west of the highland. Branch lines, in each case, make contact with the interior.

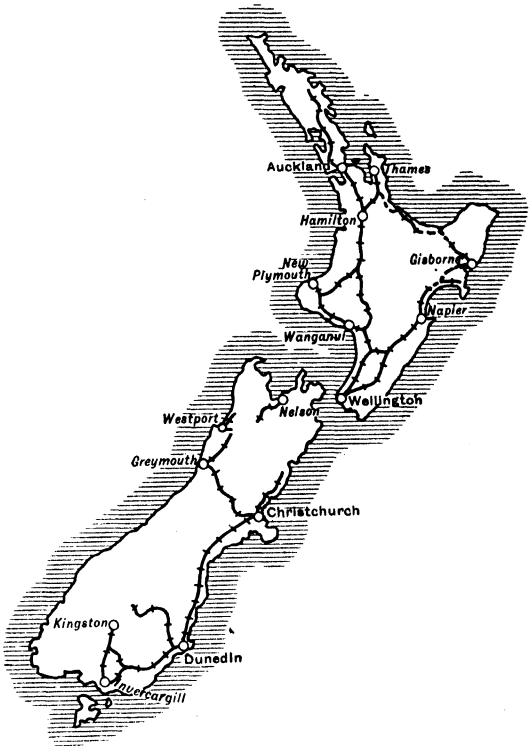

FIG. 88.—RAILWAYS OF NEW ZEALAND.

Towns.—Because farming, in some form or other, is the chief occupation, the people are, except in the mountains, spread fairly evenly over the land. The people are not, as in Australia, gathered together in cities, and there are, in fact, only four large towns, while smaller towns serve as collecting and distributing centres for the fertile lowland areas. Of these Greymouth, on the narrow strip of lowland in the west, has already

been mentioned. The port of the wealthy farming country of Southland, where large quantities of cheese, butter, wool and meat are produced and large crops of oats are grown, is *Invercargill*. In the north of South Island, facing the city of Wellington, is *Blenheim*, the centre for the basin of the Wairau. At the head of Tasman Bay, on a harbour nearly cut off from the sea by a natural breakwater, 8 miles in length, is the port of *Nelson*. As already mentioned, Nelson is the centre of a fruit-growing region. It may, some day, become an important industrial city, for the neighbourhood contains iron-ore. In North Island, *Napier*, the terminus of the railway from Wellington, provides an outlet for the extensive lowlands to the south of Hawke Bay. On the eastern side of the great northern peninsula, in an area full of historic interest, is the town of *Russell*, once the capital.

The four large towns are on or near the four big harbours and, like the smaller places, have English or Scottish names in contrast to the names of the natural features, which are mostly Maori.

Christchurch.—Two are in South Island. *Christchurch*, like its namesake in England, is on a river called the Avon and a short way from the coast. The river flows into a lagoon, separated from the sea by a long, narrow spit of sand, and too shallow to be used as an anchorage for ships. The port of Christchurch is at *Lyttelton*, on the northern shores of Port Lyttelton, another land-locked crater basin. At Lyttelton the routes from the north and the south and from either side of the Banks Peninsula meet the only railroad that reaches the west of South Island. The chief trade passing through the port is in wool, frozen meat and dairy produce, while there are also local manufactures of leather, boots, shoes and glue.

The railways in South Island centre on Christchurch, though there are two short lengths of line unconnected with the main system. The chief lines are:

1. Southward from Christchurch along the coastal plain to *Dunedin*, Invercargill and beyond.

2. Westwards across the Canterbury Plains, through the Southern Alps by the Otira tunnel to Greymouth.

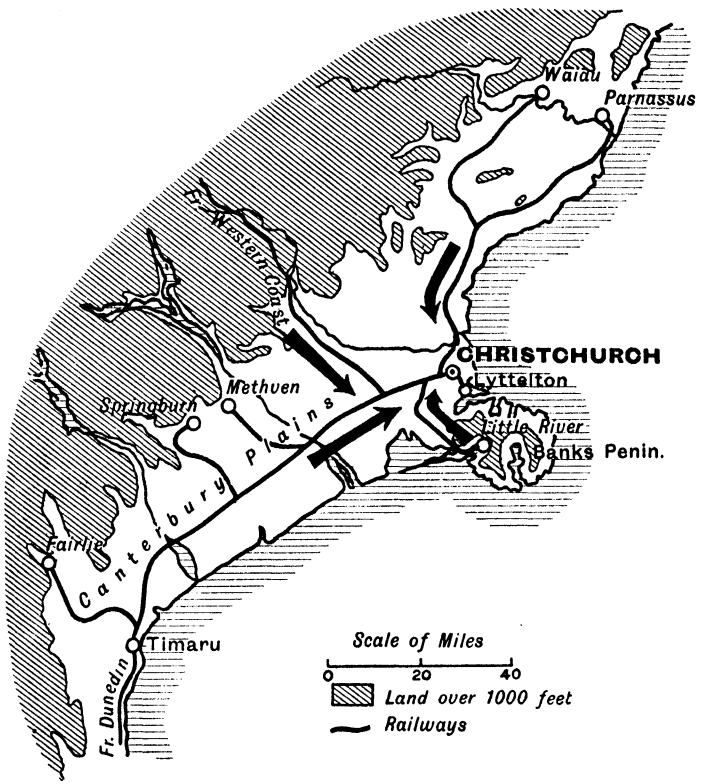

FIG. 89.—THE POSITION OF CHRISTCHURCH.

A branch of this, running north to the Buller River, will some day be connected with another short line that reaches the coast at Nelson.

Christchurch is of very late date, the first settlers arriving only in the last months of 1850. It was

intended that all the settlers should be members of the Church of England and that the new town should be a copy of a small cathedral town in England.

Dunedin.—The city next in size to Christchurch, *Dunedin*, was also a religious settlement, founded, in this case, by members of the Free (Presbyterian) Church of Scotland, and just as Christchurch is the most English part of the Dominion, so Dunedin is the most Scottish. The presence of coal, both to the north and the west of Dunedin, tends to the introduction of certain industries: here are made machinery for the coal and gold mines, agricultural implements for use on the plains, and woollen goods from the sheep reared in the east.

Auckland.—*Auckland*, the largest city and the chief port of the Dominion, lies on a narrow isthmus on the shores of the island-studded Hauraki Gulf. The town was originally built at the mouth of the Waitemata inlet, but has now spread across the isthmus and has a second approach by sea on the western side by means of the wide Manukau Harbour. The site was purchased from the Maoris for fifty-six pounds in cash, twenty tomahawks, fifty blankets, twenty pairs of trousers, twenty shirts, ten waistcoats, ten caps, four casks of tobacco, one box of pipes, one hundred yards of cloth, ten iron pots, one bag of sugar and one bag of flour.

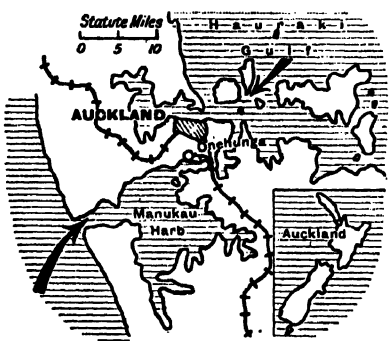

FIG. 90.—THE POSITION OF AUCKLAND.

The growth of Auckland has been due to wise and energetic people who have made full use of the advantages of the site. In the first place, as remarked above, the city has two harbours, one at the front door and one

at the back. The more important one, Waitemata, has 73 square miles of deep water, well sheltered from storms. The city is, also, on a line of communication between America and South-east Australia, and therefore can serve as a kind of sea-market, where ships from Australia and the isles of the Southern Seas may meet those from the other side of the world.

In the next place the position of Auckland on the narrow isthmus gives it command of the land traffic between the north and the south of the peninsula, while as the centre of a very rich district, Auckland has meat, dairy, fruit and furniture industries based on the products of local farms, orchards and forests.

Wellington.—Though Auckland is the largest town and chief port, *Wellington*, more centrally placed, is the capital. Its position, at the southern end of North Island, is, indeed, as nearly central as it can be. The site is on the picturesque shores of Port Nicholson, a magnificent stretch of water in a land-locked crater basin. As much of the traffic of New Zealand is still carried on by water, and Wellington is in touch with the coast traffic of both islands, it has much oversea trade, especially in wool, frozen meat, fruit and dairy produce. One of the most important of its industries is the manufacture of woollen goods.

Many of the buildings are of wood, partly on account of the former abundance and cheapness of timber, and partly because Wellington suffers from occasional slight earthquakes. The offices of the Government Department occupy what is said to be the largest wooden building in the world.

As is natural, the railways of North Island centre in Wellington. They radiate from Wellington in three directions :

1. Across the Wellington lowlands and along the coastal plain to *New Plymouth*, north of Mount Egmont.

2. Across the central plateau, by the valleys of the Rangitikei, Wanganui and Waikato Rivers to Auckland

and beyond, sending a branch eastwards along the north-west.

3. To the north-east to Napier on Hawke Bay.

Ways of Living Similar to those in Britain.—New Zealand, like most other lands, is divided into smaller divisions for the purposes of government; but the whole dominion is united, as in the case of Australia, not only by a central Government, but by sentiment and similarity of ways of living and thinking.

The strongest bond of union is sentiment. The population of New Zealand is British, more British than that of any other part of the British Empire. The cities are planned in the British style; the English language is everywhere spoken; the people live almost as their English cousins live, and, about many subjects, think in much the same way. Just, however, as the ferns mark off New Zealand as not quite the same kind of land as Britain, so certain points of view mark off the people as a distinct and separate nation.

CHAPTER XV

A LAST LOOK ROUND

WE have now studied the lands which border the Pacific Ocean, together with the larger islands and the small scattered stepping-stones that rise from the bed of the ocean. In conclusion we propose to look at the position of some of these lands with regard to each other and to the rest of the world.

In Chapter I we called attention to the vast area of the Pacific Ocean, and pointed out that a ship, sailing from Singapore to the Panama Canal, would cover a distance equal to half the circumference of the earth. A glance at a globe will show to what a great extent this area would be increased if it were not for the important world-fold of highland which passes through the Malay Peninsula to Australasia: if this belt of land had not been raised there would have been no division between the Pacific and Indian Oceans, and one unbroken stretch of water would have covered about half the surface of the entire globe.

Centre of a Water Hemisphere.—If a globe be held in such a position that New Zealand is in the centre of the picture, the peculiar position of Australasia is at once seen. To the south across the ocean appears the little-known, ice-capped continent of Antarctica; to the east lies the mountainous coast of the Americas; to the north-west are the coasts of Eastern Africa and monsoon Asia. Such a view shows Australia and New Zealand, not simply as islands on the rim of the Pacific, but as the centre of a great sheet of water, the Pacific-Indian Ocean.

What are the entrances into this hemisphere of water by means of which connection is made with the other parts of the world ?

In the far north the useless Bering Strait opens into the useless Arctic Ocean. In the west is a narrow gap between the Cape of Good Hope and Antarctica, while in

FIG. 91.—THE POSITION OF AUSTRALIA AND NEW ZEALAND IN THE PACIFIC.

the east is a still narrower passage to the south of Cape Horn, the voyage through which, in the days of sailing ships, was a very perilous adventure on account of the fierceness of the Roaring Forties and the high-running seas.

More important than these natural entries are the two man-made waterways that lead to the Atlantic: the Panama Canal that avoids the voyage round South America and the Suez Canal that avoids the voyage round South Africa. It is clear that instead of looking at Australasia as one of the lands of the Pacific, it might equally well have been considered as a great territory bordering the Indian Ocean.

Distance from Britain.—The position of Australia

and New Zealand, in the centre of a water hemisphere, has, of course, some disadvantages : these countries are far removed from all the other great trading nations of the world, a fact that has something to do with their present small populations. When, for instance, a man emigrates from the British Isles to go, say, to Canada, he often has, at the back of his mind, the possibility and the hope of being able to return at some future date to visit the friends of his youth and the relations he is leaving behind : the journey each way takes about only a week and the cost is very low. On the other hand, the journey, say, to New Zealand, takes several weeks and is very expensive : there is little chance of an emigrant frequently returning to the land of his birth. The emigrant to the distant south must be prepared to break all connection with his motherland, to bid farewell to his parents, and to settle down for the rest of his days on another side of the world.

Distance is also something of a hindrance to trade. Before the exports of Australia and New Zealand can find a market, they must be carried across hundreds of miles of sea even to the nearest shores of the surrounding ocean, and on these shores they do not find a ready market. The peoples of the monsoon lands of Asia eat rice, not beef and mutton, and dress in cotton and silk, not in wool. In America, where wool, meat, dairy produce, fruit and wheat are all in demand, there are either local supplies or populations so scarce that the demand is not great.

The markets for the products of Australia and New Zealand are in the cool lands that border the North-east Atlantic. Here are millions of people who need wheat they cannot grow and mutton and wool from sheep they cannot pasture in sufficiently large numbers. They need to buy both imported wheat and meat for food and imported wool for clothing. In other words, the products of Australia and New Zealand must be sent halfway round the world in order to be sold. Who pays for this ?

The cost of carriage cannot be added to the market price of the goods, for if the produce of the southern countries is more expensive than that from other and nearer lands, the European customers will decline to purchase. Hence, in order to sell such produce, in competition with that of more fortunately situated lands, it must be produced cheaply enough to be able to stand the heavy expense of carriage to Europe. On the other hand, things imported from the countries of Europe have up to now always had to bear the cost of carriage, as there has been no real competition in either Australia or New Zealand. The result is that these two countries are obliged to sell their produce cheaply and at the same time have had to purchase European goods at an increased price.

Just as a wheat grower, on a farm situated near a railway, has a much greater opportunity of selling his crop than one far from means of easy transport, so countries that lie upon great ocean trade routes are much better placed, for trade, than those that are far removed from such routes. It is true that the Pacific is coming to have much more importance than it has had, but the Pacific which is of importance is the North Pacific and the West Pacific, the North Pacific because it forms part of a great round-the-world route, the West Pacific because it is the region of islands, and especially of the Indies. On the other hand, the South Pacific and a great part of the Eastern Pacific are empty and vacant.

The same may be said of the southern parts of the Indian Ocean.

From Aden to Singapore lies the great trade route across the northern part of this ocean: the southern section is a vast unproductive waste of water. At Singapore more ships stop than are needed for the trade of its hinterland, the Malay Peninsula, because Singapore is a port of call between many other important trading areas. In the case of Australia and New Zealand, the ports are visited only by liners or cargo vessels doing business with them.

Advantage of Position.—If, however, there are some disadvantages in living in such a position, there are, also, certain advantages. Most of the great civilised nations of the past became prosperous because they were separated to some extent from other peoples. We have seen that the Aztecs of Mexico and the Incas of Peru grew rich and strong behind the protecting barriers of sea and of high mountains. The civilisations of Egypt and Babylon grew up behind barriers of desert: Britain herself owes much to the protection of the sea. Mountain, desert and sea are natural fortifications that give security and peace to the countries that lie behind them. Their inhabitants, more or less free from the fear of attacks by warlike neighbours, are able to put all their energy into producing and not into destroying things.

In the same kind of way, Australia, and to an even greater extent New Zealand, being far removed from all other countries, are not directly troubled by disputes that, from time to time, take place amongst them. Even the Great War of 1914–18 would not seriously have affected either Australia or New Zealand, except commercially, had not their loyalty to the British Empire caused them to arm themselves in its defence. Hence, at the antipodes, the two nations of the south have learned to rely upon their own powers of work and invention, to stand, as it were, upon their own feet, to look with impatience upon the prejudices of the Old World and to pride themselves upon the courage and independence of the New.

Comparison with Britain.—The present position of Australia and New Zealand is not unlike that of Britain in the days before America was discovered. At first the centre of the civilised world was in Southern Europe, where, upon the shores of the Mediterranean, rose and then declined the mighty empires of Egypt, Greece, Rome, Carthage and Spain. Western Europe, at a later date, rose slowly to importance, but even then the chief water highway was through the Mediterranean Sea,

and Britain, away beyond the last of Europe's western shores, was a lonely outpost at the end of the known world.

The chief difference between the present position of Australia and the past position of Britain is in the matter of neighbours. The nearest islands to Australia are inhabited by primitive peoples who have little idea of what we mean by civilisation. The East Indies and the Malay Peninsula to the north have had practically no influence in the development of Australia or New Zealand. In the case of Britain, her neighbours were white, and had something of the same kind of civilisation, though they spoke different languages, and ideas were always being received from the Continent.

Though Australia and New Zealand are separated by wide seas from the other lands around the Pacific, they are related to them. In the first place, the relief and the climate, as we have shown, are parts of a scheme that applies to all the Pacific regions; in the second place, they are related humanly to the people across both the Pacific and Indian Oceans. Australia and New Zealand trade with the United States and it is not merely distance which prevents trade with South Africa, but rather the fact that both lands produce much the same kinds of crops and animals.

Imperial Commonwealth.—The main approach, however, is from the north-west either by land or by sea. The coloured aborigines probably reached Australia by stepping, as it were, from island to island: to-day the white immigrants come entirely by water, and there is also the possibility of approach, by yellow peoples, from India and China.

Here, then, in Australia and New Zealand are populations which are white, with traditions which have their roots in Europe and specially with traditions which are British and all that that implies. These populations are small, some 8 millions all told, as compared with the hundreds of millions in South-eastern Asia, their nearest neighbours. They are far removed from the nearest

lands where there is also a British stock, in Canada and South Africa, and though they have some relations with the former, they have practically none with the latter.

But for all this isolation they do not stand alone. We have spoken of the Australian aborigines as living in the Stone Age and as having consequently an old civilisation, but modern Australians and New Zealanders also have an old civilisation. It goes back beyond Britain to the civilisations of Greece and Rome and Egypt. The difference between the old civilisation of the aborigines and the old civilisation of the modern white man is that the former has stood still and the latter has developed and is continually developing. The civilisation of the best of the South American States, though Spanish by traditions, is something different from Spanish. The civilisation and traditions of North America are something different from those of Europe from which they have grown. So the civilisation of Australia and New Zealand has developed a little differently from that of Britain.

Amongst men of European stock there has been a noted growth of ideas about the relations between human beings. Everyone wishes to be free. In a sense, the Australian aborigines and the inhabitants of the South Sea Islands are quite free; they are not continually being told to do this, that and the other; but they are not really free. They cannot do much by themselves. In fact, people cannot do much till they unite, till they are organised in some way to help each other. Organisation by itself does not bring any advantages; the Assyrian Empire was organised, but it was organised much as a robber band is organised, and people were enslaved by it rather than made free. The ideal is to combine the ideas of freedom and organisation, and this is what the modern States with European traditions try to do. The ideas really go back to Greek and Roman times; the Greek ideal was freedom in small city States; the Roman ideal was organisation on a vast scale.

Nowadays, in the United States, in the Dominion of Canada and in the Commonwealth of Australia are seen the advantages of people uniting in order to obtain greater freedom, while the British Empire combines, in ever developing ways, organisation and freedom to form the largest and freest Imperial Commonwealth that the world has seen. Australia and New Zealand do not stand alone, since they belong to this Commonwealth.

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